The Builder.

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ILLUSTRATIONS.

Bacon's Ideal Palace.....By Mr. Robert Atkinson.
1. Perspective View.
2. Elevations and Sections.
3. Plans.

Church, Walton-le-Dale.....The Late J. P. Seddon, F.R.I.B.A., Architect.

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Tradition and Invention.

THE series of lectures on architecture delivered by Mr. T. G. Jackson to the Students of the Royal Academy, the gist of which has been pretty fully reported in our columns, has been, we think, one of the most instructive series of lectures on architecture that has been delivered there, as it is one calculated to lead the students to think for themselves about the meaning of architecture; and it was also very well illustrated, not only by pictorial representations of buildings, but by what is much more valuable on such an occasion, diagrams showing the construction and building up of architectural features, and the relation between structure and expression. It might no doubt be thought (and we were inclined to think so on first seeing the announcement of the lectures) that the object of lectures on architecture to the whole body of Royal Academy Students, only a minority of whom are architects, should be to give them accurate knowledge as to the great book of the architecture of the past; a knowledge certainly useful to painters who may have to introduce architecture in their works, and necessary to architects, for an acquaintance with the actual forms which architecture has taken must precede the attempt to analyse and understand them. The justification for Mr. Jackson's choice of subject is that the history of architecture had been very fully gone into by a series of previous lectures; and therefore the occasion had come for an analysis of the structural causes of these historical forms. The choice of subject has been amply justified by a series of most suggestive lectures. But future lectures to future generations of Academy Students will have to resume the historical treatment of architecture; it is a branch of knowledge that cannot be neglected, but it is possible that in future lectures the history of architecture may be taught merely as a great field of knowledge and not as affording the proper precedents for design; and if this change does come about it will probably be to some extent due to the present year's course of lectures, which will no doubt leave their mark on the subject, and in which something has been said which much needed to be said.

But it will not do to forget that there is another side to the subject of tradition in architecture. While we quite agree that the modern architect should, as Mr. Jackson says, be himself and carry out his work in accordance with the practical requirements of the present day, it would be a dangerous gospel to preach that he should try to emancipate himself from all tradition. The effect of such an effort is seen in France and Germany in the vagaries of "art nouveau," in England in a tendency, among some of the younger architects who want to escape precedent and copyism, to an exaggerated and over-acted simplicity which sometimes comes near to obliterating architectural expression altogether. On the other hand there are those, the majority perhaps of practising architects, who would adhere to precedent, some from mere indolence, but others from a feeling that ancient forms of detail are, as it were, hallowed by long association, have become a part of architecture itself, and cannot be ruthlessly torn away. The feeling is like that expressed in regard to music in "Master Hugues of Saxe Gotha"—

> "Ah! but traditions, inventions
> (Say we and make up a visage),
> So many men with such various intentions,
> Down the past ages, must know more than this age!
> Leave we the web its dimensions."

It was in this spirit that Mr. Richard Hunt, looking over a young architect at work on a capital for a classic building, said—"Do you think you can make a better capital than the Jupiter Stator? No? Then why try?" We do not agree with Mr. Hunt's position; the Jupiter Stator model might fairly and usefully have been taken as a ground or starting-point for a new treatment, which might be as good, though different; it would at least be a more intellectual exercise than copying. But there is something to be said for traditional forms. In the first place, we cannot get rid of them unless we are to strip our modern architecture to almost the bare walling; for we cannot invent a whole school of new detail in a generation or two. Secondly, there is something in traditional forms, such as mouldings and capitals, which has gathered round it a long and dignified association of ideas, and gives a kind of continuity to architecture which is not a thing to be lightly

thrown away. The very form of column and capital, found in the Gothic shaft as well as in the Classic order, is a tradition, and one which we can hardly imagine architecture entirely deprived of.

As to Invention, we have two remarks to make, arising out of Mr. Jackson's lectures. His view of the absolute domination of structure over design—that no one ever invented an architectural feature, but that it developed naturally out of construction, appears to be absolutely true in regard to mediæval architecture; is it equally true in regard to Renaissance and (still more) in regard to Greek architecture? There is one feature in Italian Renaissance architecture which, we take it, was an absolute invention—the baluster. It does not arise out of construction; and it must have been invented by someone (we shall probably never know who) who perceived that if an open railing were wanted, something different from a miniature column was required for the situation. As to the Greeks, we are inclined to believe that they had the faculty of absolute invention, of considering a detail of construction and inventing the best treatment for it. The only account we have of the origin of the Corinthian capital actually suggests an invention; it may be, probably is, mythical, but it presupposes the faculty of invention of an architectural detail as a matter of pure æsthetic taste; and this faculty we believe the Greeks had and more or less exercised, and that they were in this respect on quite a different level, intellectually, from the mediæval architects.

Secondly, when those who, of set and serious purpose, believe in and stand by tradition in architecture, as something which they think worth holding on to—when they are accused of being mere copyists, is it not open to them to turn round and say that there are other fields of invention in architectural design besides those of columns and buttresses and detail? There is surely a field for absolute invention in plan and section. The conception of plan, and its treatment in section, is really the basis of architectural thought. A building may derive all its details from classic tradition, but if it shows invention in the idea of the plan and in the sectional treatment and (we might add) the mode of lighting, it is original building; it is invention in architecture, in spite of the details being traditional. This is a side of architectural invention which should not be overlooked; and we beg to suggest that a very useful course of architectural lectures might be given on the subject of architectural design in Plan and Section.

THE REPORT OF THE TRADE COMMISSION.

THE Report of the Royal Commission on Trade Disputes and Trade Combinations states that the main subject of their inquiry may conveniently be divided into three heads, as follows:—

A. The liability of Trade Union Funds to be taken in execution for the wrongful acts of agents of the Union.

B. The Statute Law relating to picketing and other incidents of strikes.

C. The Law of Conspiracy as affecting Trade Unions.

The Commissioners were Lord Dunedin, Sir W. Lewis, Sir Godfrey Lushington, Mr. Arthur Cohen, and Mr. Sidney Webb, but the main Report is only signed by Lord Dunedin, Mr. Cohen, and Mr. Webb; Sir Godfrey Lushington and Sir W. Lewis sending minority Reports under their own names. It is observed that the Trade Unions demand a change of law in regard to each of the above subjects, and allege that the present state of the law differs from that of the past, and is due to the effect of well-known decisions of the House of Lords, of which that in what has become known as the Taff Vale case is the most important. Considering this attitude of the Trade Unions, it is somewhat remarkable that "with some trifling exceptions," they refused to give any evidence before the Commission. The Commissioners do not feel called upon to comment on this refusal, further than to remark that their duty to continue their investigations was plainly unaffected by the attitude of any Society or individual, and that it did not involve them in any difficulty as to discovering what was the nature of the objections taken by the Trade Unions to the law as it stands, as these had been conspicuously revealed to the world both by repeated speeches delivered during the deliberations of the Trade Unions, and by Bills introduced avowedly on their behalf in Parliament. This is no doubt all that the Commission could well say on the subject; but the refusal of the Unions to give evidence before such a Commission will be felt by most people to be an indication of conscious weakness.

The Taff Vale case is the first point touched upon in the Report, and it may be convenient here to quote the summary of the portion embodied in Clause 13 of the Report:—

"13. In the case of the Taff Vale Railway Company, the Amalgamated Society of Railway Servants, being a Trade Union registered under the Trade Union Act, 1871, and its officers, were sued by the Taff Vale Railway Company in tort for having conspired to induce the workmen of their company to break their contracts, and also for having conspired to interfere with the traffic of the company by picketing and other unlawful means. Mr. Justice Farwell having granted an interim injunction against all the defendants, the defendant Trade Union appealed on the legal question whether a registered Trade Union was liable to be sued in tort. The Court of Appeal reversed the decision of the Judge, but ultimately the House of Lords restored it, holding that a registered Trade Union could be sued in tort by the name in which it was registered under the Act. The grounds for the judgment were that a registered Trade Union having been invested with the statutory powers of the Act of 1871, it must be legally inferred that it was the intention of Parliament that such Trade Union should be liable to be sued in its registered name. A strong opinion was also expressed by Lord Macnaghten and Lord Lindley that, apart from the Trade Union Act, any Trade Union whether registered or not registered could under the general rules of legal procedure be sued in tort by means of a representative suit, *i.e.*, a suit in which a few members have been selected by the plaintiff to represent all the defendants. The case then went for trial, and verdict was found for the plaintiffs. The damages were assessed (or fixed by agreement) at 23,000*l.*, which sum has since been paid out of the Union funds."

The judgment of the House of Lords, it is admitted, took many persons by surprise, and the Trade Unions protest against it as "making a practically new law against Trade Unions." The Report however says:—

"We are satisfied that the law laid down by the House of Lords involved no new principle, and was not inconsistent with the legislation of 1871."

The argument on which this conclusion is based is drawn out at some length, and is of considerable interest. The fact that no statute had previously laid it down that a Trade Union, as such, was liable to an action "in tort," makes no alteration in the fact that the members of a Trade Union were, by the previously existing law and before they were registered liable personally to such an action. The operation was restrained only by the practical difficulty of getting at all the defendants. In the eyes of the law before 1871 a Trade Union was nothing but an aggregate of individuals, and the Courts of Common Law adopted a rigid rule that in an action to recover damages in respect of a "tort," judgment could not be recovered against any person or persons not named as defendants in the action. The liability of the funds of a Trade Union could at any time have been effectively realised in the case of a Trade Union consisting of only a small number of persons, who could have been made individually responsible. The difficulty arose only in the case of a body so numerous that it would be practically impossible to bring them all into court as defendants. In considering the Taff Vale case the House of Lords took the view that from the provisions of the Trade Union Act of 1871 it was legally inferred that the intention of Parliament was that a registered Trade Union could be sued under its registered name, with the consequence that its funds would be liable for any damages that might be awarded. No public Commission as a body has represented that they ought to be exempt; no Government has promised that they should be exempt by forthcoming legislation; and no judge has pronounced that they are exempt. On the question of abstract justice the Report speaks plainly and strongly:—

"32. It remains now to consider the question on the ground of justice and equity, and here the objections against disturbing the law as laid down in the Taff Vale case appear insurmountable. There is no rule of law so elementary, so universal, or so indispensable as the rule that a wrong-doer should be made to redress his wrong. If Trade Unions were exempt from this liability they would be the only exception, and it would then be right that that exception should be removed. That vast and powerful institutions should be permanently licensed to apply the funds they possess to do wrong to others, and by that wrong inflict upon them damage, perhaps to the amount of many thousand pounds, and yet not be liable to make redress out of those funds, would be a state of things opposed to the very idea of law and order and justice."

In the face of such a decisive opinion in the Report of a Royal Commission, we do not imagine that any attempt to upset the Taff Vale decision can have a chance of success. It has been shown to be not only good in equity but good in law. In regard to this point Sir Godfrey Lushington, who dissents strongly from some other conclusions of the main Report, is entirely in agreement. But he dissents from a proposal made in the main Report, that the Provident Funds of Trade Unions should, by some form of legislation which the Report only suggests in a tentative manner, be separated under law from their other funds and made free from liability. The idea with which this suggestion is made is evidently that it bears hardly on those who paid money into such a fund, to be liable to lose their savings through wrong action on the part of the Union. To us it seems a very

natural reflection—let them see that their Unions do not act wrongly. As Sir Godfrey Lushington puts it, "Thrift is a good object, but thrift comes after payment of just debts, and certainly not least, debts incurred in consequence of wrong-doing to others. The case is only made the stronger by the attempt altogether to repudiate debts of this character. That workmen should collectively do wrong, and be able to refuse to those who have suffered such wrong any reparation out of the funds they have collectively saved for their own use and benefit, is contrary to justice;" and in fact, the knowledge on the part of those who have placed their savings in the care of a Trade Union, that in the event of the Union rendering itself liable for a wrong to others their savings will be endangered, would be a very powerful influence on those members to do all they could to keep the managing Committee in the straight path; and to exempt Provident Funds from liability would be, as Sir G. Lushington shows, a totally exceptional kind of legislation, and would remove a very strong incentive to avoid illegal acts.

On the question of picketing, which, though not a term known in or defined by law, is accepted by the Commissioners as a matter of convenience, its meaning being generally understood, the main Report is not so clear or satisfactory. The Commissioners who sign the Majority Report seem to have divided between a conviction that picketing is actually a form of persecution, and a desire to allow it with the safeguard of a new clause added to the Conspiracy and Protection of Property Act (1875). That Act defines five kinds of persecution for which the culprit is liable to fine or imprisonment. One of these runs—'watches or besets the house or other place where such person resides, or works, or carries on business or happens to be, or the approach to such house or place"; with this proviso following at the end of the clause—"Attending near the house or place," etc., "in order merely to obtain or communicate information, shall not be deemed a watching or besetting within the meaning of this section"; a sentence which is almost cynical in its disregard of realities, though on the surface it may seem harmless enough. The Report quotes on the next page the proposal made in Mr. Whittaker's Bill of 1905, which may be taken to embody the wishes of the Trade Unions:—

"Clause i.—It shall be lawful for any person or persons acting either on their own behalf or on behalf of a Trade Union or other association of individuals, registered or unregistered, in contemplation of or during the continuance of any trade dispute, to attend for any of the following purposes at or near a house or place where a person resides or works, or carries on his business, or happens to be—

(1) for the purpose of peacefully obtaining or communicating information;

(2) for the purpose of peacefully persuading any person to work or abstain from working."

It had been pointed out, in a previous clause of the Report, that the effect of the 1875 Act is that "watching or besetting" was only lawful for "communicating or obtaining information"; that for the purpose of "peacefully persuading" it was an offence; and this is the limitation that Mr. Whittaker's Bill wished to get rid of. The Report expresses the opinion that such an enactment would legalise the attendance of any number of persons for the specified purpose, although the attendance might be such as to cause a nuisance or a trespass. But the real objection, it is observed, lies deeper:—

"The evidence on this matter laid before us is on this point really overwhelming, and is evidence which the Trade Unions have made no attempt to contradict. What it comes to is this, that *watching and besetting* for the purpose of peaceably persuading is really a contradiction in terms. The truth is that picketing—however conducted—when it consists of watching or besetting the house, etc., and it is to be observed that the statute places no limit to the number of persons attending for the purpose only of obtaining or communicating information or to the length of time during which such attendance may be maintained—is always and of necessity in the nature of an annoyance to the person picketed. As such, it must savour of compulsion, and it cannot be doubted that it is because it is found to compel that Trade Unions systematically resort to it."

That is plain speaking and common sense; but unfortunately the Majority Report does not carry its common sense far enough. It goes on to say that it is admitted that the real abuse of picketing consists in illegal intimidation, in producing in the mind of a person apprehension that violence would be done to his family and his property. But as a strike is not illegal, the right to persuade others to strike is legal and should be safeguarded; and it is suggested that this could be done, and the oppressive action of picketing struck at, if the watching and besetting clause were altogether withdrawn, and another subsection inserted—"Acts in such a manner as to cause a reasonable apprehension in the mind of any person that violence will be used to him or his wife and family, or damage be done to his property." It is really impossible to read this without amusement, as one thinks of the delicate line which will be drawn, and which courts of law will be asked to draw, between the sort of picketing which may be a source of the most intense annoyance and persecution to its victim, and yet which may adroitly be just stopped short of what can be legally made out to be causing "a reasonable apprehension that violence will be used." It is like the peaceful Quaker's "Friend, thee's not wanted here," while drowning the victim all the same.

On this subject, in fact, the Report blows hot and cold with the same breath. It is a relief to turn to the special Report of Sir G. Lushington, who on this subject speaks the plain common-sense of the matter in no uncertain tone. In his opinion, even if the sole purpose were peaceful persuading, watching and besetting of a man's premises ought not to be permissible. It is a form of persecution that a workman cannot enter or leave his house without being beset and hampered by men fastening on him, often with angry and abusive expressions, to "persuade" him—should it not rather be said to bully him—into doing as they are doing. And then, as Sir G. Lushington very pertinently asks, why are Trade Unions alone, of all the world, to have the privilege of doing this?—

"The truth is that picketing is a form of industrial conscription; and, in organising it, Trade Unions act as if they represented not only their own members but the entire body of workers, and had authority to enforce regulations to which all were bound to conform. It is a system which could not be habitually practised by any society in which membership was purely optional, and which recognised that every individual was free to act as he pleased. In connexion with this point it must be remembered that the Statute does not apply exclusively to workmen; at the instance of Trade Unions it was made of general application, and extends to the whole community. As a fact I believe the particular enactment is not required for anybody except workmen in time of strike. Picketing exists nowhere but in connexion with Trade Unions. Is it possible, for instance, to imagine that a tradesman should picket the premises of a competitor? or that one railway company should picket the station of another railway company? or that the authorities of a church or chapel should watch and beset the approach to a rival church or chapel? or that picketing should be introduced into political warfare, and say the Conservative organisations should station pickets at the doors of the private residences of Liberal Members of Parliament, to watch them day after day coming in and going out, to communicate or to receive information or to peacefully persuade them? The very suggestion seems ludicrous; yet this is but a very faint picture indeed of what in times of strike individual workmen have actually to undergo at the hands of Trade Union pickets."

Sir G. Lushington concludes by suggesting that picketing is an abuse for which a remedy is urgently required; that the personal freedom of workmen needs not less protection than hitherto, but more; and he therefore recommends that the existing prohibition of "watching and besetting" be retained in the Conspiracy and Protection of Property Act, and that the proviso permitting it for the sole purpose of "giving and receiving information" should be repealed; and we fully agree with him. The supposed maintenance of the distinction between "peacefully persuading" and "giving and receiving information" is absurd on the face of it; it is legislating for a man's intentions, which cannot be proved one way or another. The only fact a Court can have on evidence is that the man or men were there, "watching and besetting"; but what possible evidence can discriminate as to their purpose, or who is to draw the line between "persuading" and "giving information"? We heartily wish that Sir Godfrey Lushington's trenchant remarks had appeared in the Majority Report instead of in his own Separate Report; but as it is, it may be hoped that they will not altogether fall to the ground, and that they may do something towards putting a check on the legalising of a system of petty tyranny which is a discredit to a civilised country.

NOTES.

Coast Erosion.

A PRACTICAL movement is now on foot with the object of inducing the Government to introduce into Parliament a Bill confirming the responsibility of the Crown to protect the sea coast of this country and to afford assistance to local authorities in the construction and maintenance of coast protection works. The movement in question originated in the Conference recently held in Westminster, when the representatives of various municipal and other councils were present. It certainly is the statutory prerogative and the duty of the Crown to protect the land from inundation for the benefit of the commonwealth; and, as a matter of fact, no obligation rests upon anyone else. Moreover, local authorities do not appear to have power to execute protection works unless they also happen to be the owners of the threatened land. We know the difficulty of the problem is largely to be found in the small value of land along the coast

except in the vicinity of towns, but the case of those living near the sea is somewhat hard, as the cost of the necessary works is positively prohibitive in some places, and in others involves exceedingly heavy burdens in the way of taxation. The most unfortunate thing of all is the unrestricted removal of beach material, a habit in which Government departments are among the worst offenders. This suicidal practice should certainly be stopped at once, however indisposed the Government may be to fall in with larger views as to their responsibilities.

Economies in Railway Working.

WITH first-class passengers travelling in their own motor-cars, electric trams and omnibuses capturing humbler individuals, and working expenses mounting steadily upwards, railway managers find it necessary to look in all directions for methods of retrenchment. Combination is, of course, no new experiment, and this is the key-note of the new departure which is being announced by the chairmen of several leading lines at the half-yearly meetings of shareholders. In certain large manufacturing centres steps are being taken to establish receiving offices, organise a joint collection of goods and parcels, and generally to work in combination instead of in rivalry wherever practicable. The London and North-Western and the Midland Companies, which are in contact in many places, have already entered into an agreement to work on co-operative lines in a number of manufacturing towns; the Lancashire and Yorkshire Company have also joined in the movement, and it appears likely to spread. This amalgamation of forces will bring down town-office expenses, and render unnecessary many duplicate trains, both passenger and goods; and it is claimed that the new arrangements will be advantageous rather than prejudicial to the trading public, while being of undoubted benefit to the shareholders.

Labour Returns.

THE labour returns show continued improvement in nearly all the industries with the exception of the building trade, in which stagnation continues. The Trades Union returns for January prove that more workmen are in employ than at this time last year, the figures relating to the unemployed showing that only 4·7 trades unionists were unemployed, as compared with 6·8 per cent. at the end of January last year. Despite the continued improvement in the labour returns during the past few months, more has been heard of the unemployed this year than for many years past, a fact not without significance in view of recent legislation dealing with this question.

The Port of Liverpool.

NOTWITHSTANDING the remarkable expansion of traffic on the Manchester Ship Canal, Liverpool does not seem to suffer any diminution of prosperity. The annual statement of Mr. Robert Gladstone at a recent meeting of the Mersey Docks and Harbour Board confirms this fact in a remarkable manner. We have referred on a previous occasion to the activity displayed in dock construction and other harbour works in Liverpool. At the present time the site is prepared for a scheme of dock extension to come before Parliament during the next session. The first step in this project will be the formation of two new entrances, each 135 ft. wide, into the river, the making of a vestibule dock out of which will open two others suitable for vessels 800 ft. long. These entrances are designed to serve for a still larger extension opposite Seaforth, the works being rendered necessary by great increase of trade and the increasing size of modern ships. New entrances to the basins at Tranmere are now nearly complete, the new river wall is well advanced, nearly 90 acres of land have been set apart for shipbuilding purposes, and the board propose to build a new dock with an area of 11 acres at Birkenhead. Altogether Liverpool seems likely to maintain her position as the second greatest port of the world, and possibly to surpass London, unless something practical can be done for the improvement of the metropolitan port.

Electrolytic Theory.

MR. WHETHAM'S lecture at the Royal Institution last week on the "Passage of Electricity Through Liquids" will be appreciated by all who are interested in electrical theory. As one of the foremost workers in this branch of research, and as a writer who has grappled successfully with some of the most abstruse problems in connexion with it, we had expected that he would expose the fallacies of some of the old-fashioned theories. Instead, however, of doing this he gave an excellent elementary description of the main phenomena in electrolysis, and it was only occasionally by a qualifying phrase or a happily chosen analogy that one realised that the lecturer had a quite different conception of the mechanism of the electric-current to that universally adopted until a few years ago. He showed the decomposition of a solution of sulphate of copper into its constituent ions, by means of an image on the screen, and called especial attention to the concentration of the solution where the current entered the liquid, and its attenuation where it left. Faraday called the constituents, into which the electric current separated the liquid, "ions" because they move. In modern theory these ions carry the electric charges, and the actual convection of these charges constitutes the current. In the older theories the analogy used was that of water flowing from one reservoir to another, and being pumped back again. In the modern theory the analogy of a row of men carrying the water in pails between the two reservoirs is given. The lecturer showed on the screen the actual motion of the ions, and explained how their velocities were measured. These measurements have been made by Steele and others, and are found to be in practically exact agreement with the theoretical values of Kohlrausch. Hardy's experiments on the coagulation of a clear solution of albumen by the addition of certain chemical salts were shown, and the reason why the higher the valency of the ion the more efficiently it acted in "curdling" the albumen was explained. It is interesting to notice that both the chemical electrician and the physiologist are now exploring this field of research.

The Hellenic Society.

THE paper by Mr. E. Norman Gardiner read at the meeting of the Hellenic Society on Tuesday, under the title "Heracles* the Pancratiast," dealt with a rather curious subject which has some bearing on the representation of Hercules in ancient art. The "Pankration" seems to have been something like the Japanese "jujitsu" of which we are hearing so much now, and was a contest something between wrestling and boxing, the main object being, in one way or another, to tire out the adversary or put him *hors de combat*. Hercules was the patron or hero of those who were victors in this struggle; and Mr. Gardiner took it that the vase representations of the strife of Hercules and Antæus and of Hercules and the Nemean lion were a kind of typical representation of the Pankration, showing Hercules in the act of lifting Antæus from the ground, throwing the lion over his shoulder, etc. The series of slides shown were very curious and interesting, and the conclusion deduced from them by the lecturer was that the later (and now the popular) idea of Hercules as a kind of giant of over-developed muscle was not in accordance with the original Greek conception, in which Hercules represented rather youthful vigour and resource in athletics. In all the representations that had been shown of his combats the impression was given that the victory was one of science over brute force.

The Leicester Galleries.

THE exhibition of paintings and water-colours by Mr. Charles Sims, at the Leicester Galleries, throws rather a new light on the possibilities of this clever painter; in fact, until we caught sight of "The Moth Catchers" (54), an obvious first study for a recent Academy Picture, we felt some doubt whether it was the same Mr. Sims whose work we knew at the Academy. From the variety of the subjects of the small pictures here, and of their treatment, it seems evident that this artist has much more within his powers than his Academy pictures have yet shown. Sketchy as many of the works are, there is much both of fine colour and fine suggestion in composition. In this latter respect the sketches numbered 15 and 24 may be particularly noticed; they are very slight but they have the making of pictures in them. Among the larger works "Beech Boughs" (14) and "Washing Day" (26) are good, the latter is a very carefully studied interior both as to figures and accessories. "Bacchus and Ariadne" (34), which seems to have been painted under the influence of Watts, is unsatisfactory in respect of the plump and rather stumpy figure of Ariadne; but the vigorous movement of the figure of Bacchus is finely given, and the whole is a striking symphony in colour. The best thing in the whole collection, and the most complete in itself, is "Sunshine and Wind" (50), showing the figures of a woman and child drifting across a bleak common on a

* The Hellenists are not always very logical in their Anglicising of Greek names. "Hercules" is of course the Roman form, popularised in English by long use; but if "Hercules" does not satisfy them, why do they not adopt "Herakles," the genuine Greek name, instead of "Heracles," which is neither one thing nor another?

stormy day. If this has not been worked up into a large and complete picture (we do not recollect it as such), we hope it will be. In the adjoining room is a miscellaneous collection of oil-paintings, a good many of them by the Norwich artists, among whom James Stark comes out very well, and there are two fine Cromes (19 and 42) of rather unusual subjects for this artist; "Cattle at a Pool" by Vincent (30); "A Gipsy Encampment" by Stothard (46), weak in the figures as usual, but exceedingly powerful in its landscape effect; and a "Wooded Landscape" (33) assigned in the catalogue to "Colkett and Bristow," whose joint production has a great resemblance to that of Stark, and Stark at his best. There is also a very fine painting of a stormy coast scene, "Mouth of a Sussex River" (7), by "Jock" Wilson, whose name we confess to having forgotten, but who is worth remembering if this is a typical example of his powers. Among the few portraits in the collection it is interesting to see a fine example of the work of Reynolds's pupil and follower Northcote—a half-length of a lady, the colour and quality of which raises one's respect for an old R.A. whose repute has rather suffered, probably, by the satirical portrait of him in Haydon's Autobiography, and perhaps by the literary celebrity of Hazlitt's "Conversations with Northcote," which have created a kind of impression that the latter was chiefly occupied in talking about art. Evidently he could paint as well as talk.

Dudley Gallery Art Society.

THIS Society, which retains the name derived from its old exhibition room, holds its exhibition this year in the large room of the Alpine Club, where the light at all events is admirable. The exhibition, amid a certain proportion of mediocre work, contains more really interesting drawings than usual; drawings which have character and individuality, and not merely competent execution. There are more, indeed, than we have space to mention. Among those that we have noted as especially good are Mr. Joseph Powell's "Rye from the Marshes" (20); Mr. S. G. W. Roscoe's "Autumn Morning on the Exe" (54); Mr. James T. Watts's small landscape, "Rain on the Moor" (69); and Mr. David Green's "On Goathland Moor." The landscapes by Mr. R. A. K. Marshall are beautifully finished and very delicate in their distant effects, but too minutely picked out for breadth of effect. Miss Jex Blake and Miss Margaret Bernard show their usual power in a very opposite school of water-colour art, that of broad effects of composition and colour, with no breaking up into small detail. Mrs. Jardine's snow scene, "Zuoz, Engadine" (91), with its effective contrast between the pure white of the snow and the dirty white of the village houses, is fine and truthful. Among the few pictures in which figures are prominent Mr. Innes Fripp has made a good scene out of the "Merchant of Venice" (66); his group of Elizabethan men on the seashore in "Treasure Trove" (181) reminds one pleasantly of Kingsley's "Westward Ho!" and is well composed and carefully worked out; and Miss Janet Fisher in "Bluebells" (160), where a young girl kneels in a wood to collect the flowers, appeals to a sense of something more than mere execution. Among others we may mention Mr. Duassut's "Essex Lane in Winter" (19); Mr. Roscoe's "The Landslip, Beer" (51); Mr. Newton Benett's "Buscot, Thames" (274), and Mr. Geo. Marks's beautiful little landscape, "Gorse" (209), which is quite perfect.

"From the Alps to the Apennines."

THE water-colour drawings by Mr. E. Whyley, exhibited under this title at the Fine Art Society's Gallery, belong to some extent to the order of topographical drawings, which are looked at as much for what they represent as for their artistic style; but these are very good work of their kind, and in those in which architecture is the prominent subject, such as "South Porch, Bergamo" (18), "Doorway of San Rufino, Assisi" (61), and "West Door, Verona" (65), the architecture is very well treated—precise in definition without being hard. "Nightfall, San Gimignano" (16) is an interesting sketch, showing the celebrated towers as silhouettes in the twilight. Among those which deal with more extended landscape effect may be mentioned "Morning Mists" (7); "On the Road to Sale Marasino" (12), where the colour treatment of the hills in the background, just a shimmer of green through a hazy atmosphere, is very delicate; and "Flush of Sunrise, Montreux" (49), a successful indication of an effect very difficult to realise, even in water-colour, a better medium for this type of effect than oil.

Etchings after Corot.

AT Messrs. Dowdeswell's Gallery there is on view a collection of very fine etchings after the landscapes of Corot, by MM. Brunet-Debaines, Krostewitz, Huet, Monnier, and others. As etchings, and as translations of Corot into black and white, there is not much to choose between them; all are good, and Corot's style, which is not dependent on strong colour so much as on composition and aerial perspective, is peculiarly suitable for representation by etching, in which the evanescent character of the great painter's effects can be better represented than in the more pronounced and precise lines which are inseparable from engraving. If we were to select any as particularly successful they would be Monnier's etching of "L'Etang" (10) and Brunet-Debaines' "Pastorale" (3).

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary general meeting of the Royal Institute of British Architects was held on Monday at the rooms of the Institute, No. 9, Conduit-street, W. Mr. Leonard Stokes, Vice-President, occupied the chair in the absence through indisposition of Mr. John Belcher.

Furniture.

The minutes having been taken as read, Mr. E. Guy Dawber read a paper on "Furniture," of which the following is an abstract:—

Tracing the development of furniture in England, the author said that nearly all the examples shown in MS. illustrations down to the middle of the XVIth century were of an ecclesiastical character. Throughout each successive period the style of the furniture had followed that of the architecture, and if any special piece was required, the same craftsman who built the church, monastery, or castle, made it, or at any rate had such control, that in character and detail it assimilated with the building. Household furniture in the XVIth and XVIIth centuries was characterised by simplicity and stability of construction, and, as much of it had to be shifted from one castle to another when any great personage moved, its supply was necessarily limited, and rooms were consequently sparingly furnished. The influx of foreign workmen from Italy and the Netherlands had hindered the development of a distinctive and national taste, and up to the close of the XVIth century there was hardly a definite and decided tradition. After the design of furniture began to break through its ecclesiastical environment, when the Renaissance in Italy had developed in England, then we find a real national style gradually being evolved. Perhaps the most constructively perfect period of English furniture was the end of the XVIth and first half of the XVIIth centuries, and though its design was based almost entirely on classical influences and detail, and the outlines may suggest extraneous origin, it retained a character essentially English, and soon lost any trace of foreign influence. The workmanship was of the best, the construction admirable, and framed in a manner calculated to withstand the roughest usage. During the reign of Charles I., and for many years previous, velvets, brocades, satins, and stuffs had been imported from Venice and abroad, and much furniture from Italy as well as the Netherlands. The Restoration, in 1660, caused a further influx of furniture and workmen from Holland, Flanders, Spain, and France; and to this we owe a great deal of the mixed character and diversity of style so prevalent in the latter half of the XVIIth century.

Marquetry was one of the distinguishing characteristics of late Dutch XVIIth century furniture, and when treated in a quiet and simple manner was very pleasing; but although it became the fashion for some years in this country, and chairs, cabinets, clock cases, and indeed all surfaces, offered opportunities for the new style of decoration, it never took a firm root, and after a few years died out. Carving—at the beginning of the XVIIIth century—was sparingly used, the tendency being towards greater lightness and grace of line in furniture. In the XVIIIth century many schools of craftsmen and cabinet-makers based their designs almost exclusively on the models of the leading architects of the day. Sir Christopher Wren had gathered around him a school of designers and carvers whose influence upon furniture-makers was very marked. It was the age of constructive joinery and beautiful carving, and whether in oak or deal one single style and tradition permeated the whole country. The architect was the chief director in all matters of style, proportion, and arrangement, and a great deal of the actual furniture was designed by him. It is not too much to claim that the classic spirit so predominant throughout the furniture of the XVIIIth century, is mainly attributable to the influence of architects. Chippendale's first book was published in 1754. In reading it we cannot help admiring the power he possessed of combining the seeming incongruities of the so-called French, Gothic, and Chinese styles which were then so fashionable, and in making out of them pleasing and harmonious pieces of furniture, and imparting to them such symmetry and dignity. We see in his work how all his effect was obtained from outline and carving only, for though inlay, veneer, and painting had long been in use, he discarded them altogether, and worked in the solid mahogany. But he did not originate a style; he only carried on the existing traditions of the day and clothed them in fresh detail of his own, or borrowed from other sources. Whatever we may think of the general design of Chippendale and his fellow-workers, there is no doubt that these famous cabinet-makers thoroughly appreciated the proper limits within which carving, as applied to furniture, should be confined. Lowness of relief, adaptation to the structural lines, the employment of a maximum of plain surface with a minimum of carving, are all strongly-marked characteristics of the work of this period. The author went on to deal with the work and influence of other eminent furniture designers—Shearer, Heppelwhite, the brothers Adam, Sheraton, etc. Two

facts, he said, mainly contribute to the charm and interest of the furniture of by-gone days: the first, that its form and detail were so admirably adapted to the material it was made of; the second, that it was always so singularly suitable to its environment.

Towards the close of the XVIIIth century, though the design of furniture was still influenced by the architectural features and character of the houses it adorned, it began to show that the necessity for the two being absolutely in harmony was not considered essential, for a great school of specialists in furniture-making had arisen, and the association between the architect and cabinet-maker was beginning to weaken, until it ceased to exist. About half a century ago, when perhaps domestic architecture in England was at its lowest ebb, things reached such a pass that the fashion in furniture became absolutely regardless of architectural principles or fitness, and only the idea of comfort and luxury prevailed, until the inevitable reaction set in, and people, finding they could no longer get new furniture which was not an eyesore, reverted to the opposite extreme—viz., the older styles of former days. Then came the difficulty which still exists—which particular style amongst those of the past to select. All, perhaps, are equally incongruous in modern houses, yet all appeal to people in different ways; and now that in the mind of the general public architecture and furniture have been definitely divorced from one another, it is the fashion to pick up pieces of furniture, quite indiscriminately, because they happen to be beautiful, quaint, or old, and people fill their houses, utterly indifferent to the effect produced. All this brings us back to one thing worth noticing—that throughout the periods when architecture flourished and was a living art, furniture was the same, and very beautiful work was the result; but when there ceased to be any real tradition in architecture, at the same moment furniture died out. The two are inseparble—they always have been and always will be; and just as to-day we have a real living common-sense style of domestic architecture, so also, with its development, will a real style of furniture arise. There is undoubtedly a great effort being made at the present time amongst many of our ablest designers and craftsmen, to remedy this by producing designs for furniture original and artistic in treatment. There is still, however, too much inclination, in aiming at simplicity of form, to neglect the beauties of form altogether. Because mouldings have been excessively or wrongfully employed, there is a tendency to abjure them altogether, so losing one of the main factors in creating beauty and interest. Of course, to class the whole of the modern furniture produced to-day in such a category would be absurd, for we have designers and craftsmen who, if only given the opportunity, can design and make furniture which can rival the productions of past ages. But until there is some settled standard of thought and tradition permeating the whole country, any efforts at design in furniture must be but isolated and individual. The author said he did not suggest that an architect should design furniture; but he should have in his mind the house he is building, finished and furnished complete, just as a painter has a mental impression of the last state of a picture he may only be beginning to put on canvas. That impression may be modified and improved in detail as the work proceeds, but the general scheme, the broad idea, will remain. For the architect, however, who is more thorough in his work, and is not content with constructing the mere shell of his house, there is much scope for excellent effects, by planning permanent fitments, such as bookcases, cupboards, side-board recesses, and so on. The reproach that the British is an inartistic nation is being removed. People have either become artistic themselves or have attained to the wisdom of Socrates in admitting that they know nothing, and are content to leave the work to those whose business in life it is to show them what is artistically right and in good taste. With the improvement in domestic architecture, which is so marked, the author felt sure that it would only be a matter of time before the public realised that good, sensible, modern furniture could be equally well obtained at a reasonable cost; and this result would be greatly helped if architects generally gave more thought and care than they do at present to the finishings and furniture of the houses they design. An architect's training and sense of proportion should enable him to exercise a very helpful power in controlling and directing the taste of the public.

Mr. Percy Macquoid, in proposing a vote of thanks to the reader of the paper, said it was difficult to say anything fresh after the excellent paper which dealt with a very large subject in a simple way, and had brought almost all the types of furniture known to them into a small compass. Mr. Dawber had shown them how one period melted into another, and they had seen from the illustrations the different links, and that, to his mind, was the great interest in furniture. It was the periods of transition which taught the most. He would have liked to have seen a little more of the Elizabethan furniture, but it was extremely difficult to find genuine examples. The court cupboard, for instance, was a very important piece of furniture, and really comprised every necessity for the family. The court cupboard given in the illustration was from the Victoria and Albert Museum, and in connexion with this piece of furniture he would like to tell a story. Some time ago a gentleman living in the West sent him some photographs of two chairs of the same date and type of this court cupboard, and asked him to come and look at his furniture. They could imagine his horror when he found the hall filled with furniture made by the same hand, and he had to tell his friend that there was not a single piece of furniture genuine. He asked how the furniture was obtained, and his friend told him he had been getting it piece by piece for the last fifteen or twenty years, and that it came from a family in the North who were greatly reduced in circumstances, and who said the furniture was all made by the carpenters of the family in the reign of James I. This gentleman had spent large sums of money in getting oak furniture, but he was glad to say that he obtained the money back, and the furniture was returned to the "carpenters of the reign of James I." One of the most beautiful specimens in oak that Mr. Dawber had shown was the Charterhouse table, which was especially interesting because it showed the strong influence of the French style of Henri II. of about 1656, and he did not suppose there was any other specimen of English oak furniture that quite represented the style as perfectly as that table. There was one subject on which Mr. Dawber said little. He mentioned the fact that walnut was used, and no doubt very extensively, and some specimens entirely constructed of walnut were made before the beginning of the Civil War, and so great an impression had this walnut made on the people that they planted a great many walnut-trees. Walnut was evidently looked on as a rather precious thing, because they never found an inferior piece of furniture made in walnut in Elizabethan or Jacobean times. The date of the Yorkshire chairs given by Mr. Dawber as 1620 seemed a little early, because the applied split baluster which occurred was, he fancied, a little later in date. If they did not put these chairs a little later they would practically find they had no chairs to sit on, because then there would have been no chairs made between the Restoration chairs and those very distinctly made in 1625, and he could not imagine that a local variety would have sprung up so early as 1620 bearing the split baluster. It must have come from Holland, through Suffolk, and got to the north. Also, one missed the very rare specimens of gilded furniture beginning at about 1710 and going on to about 1725 or 1730, the taste for which, he would imagine, came in with the Guelphs. It was very showy, and bore on the knees of the chairs and sofas an ornamentation that he was at a loss to account for. He meant the lions' and the eagles' heads at the end of the arms. There must have been something symbolical about that, for they found it only in that period and very extensively produced. There was also an extremely objectionable face used which doubtless represented someone at the time, and he would like to know who it was. He agreed with Mr. Dawber about Chippendale, who was a very able man, but did very little that was really original except to refine and make lighter certain forms which existed before him, and to make these forms more practical and suitable to the costume and appearance of those people who used the chairs. They would remember that in Chippendale's time costumes lightened. The costumes of the first George and Anne were far more clumsy, and the furniture made then was more suitable to the rather dull, clumsy people who used it. Chippendale's time was far brighter and a more intellectual and gay period, and consequently they found a rather lively characteristic introduced into the furniture. Mr. Dawber had shown them some very beautiful specimen's of Adam furniture, and he felt that in referring to the merits of Shearer, Heppelwhite, and Chippendale they were inclined to neglect Adam. Where they found Adam in possession of a house designed by him, and with the furniture in its original place, the effect was most beautiful. There was one very beautiful Adam house, where the furniture was also designed by the architect, and that was Lord Jersey's house at Osterley. What had been said with regard to modern furniture was most interesting, and he had no doubt when they found the public would pay as much as their ancestors paid they would get something respectable produced. At present it seemed to him that the wood was rather flat and the mouldings were flat, and there were a great many uprights which suggested that clothes should be hung upon them, and the hinges were much larger than was wanted, and there was a sense of affectation of bareness which did not attract. As to the Nouveau Art, he thought it was the result of a person who was living entirely by himself, neglected by society, and who, when he sat down to design furniture, dined on red herrings and absinthe, and then tried to produce something extraordinary, in which he thoroughly succeeded.

Mr J. D. Crace, in seconding the vote of thanks, said he felt some interest in being there, because it was now forty-nine years ago that his father read the first paper on the same subject in that room, and it was particularly fixed on his mind because he had a large hand in preparing the diagrams for the paper. The many things which Mr. Dawber touched upon were all interesting, but he thought he made somewhat light of the aid that might be got in tracing the history of furniture from old manuscripts. The illustrations to be found in many of the old manuscripts were by no means exclusively ecclesiastical. Many of the dedication pages in old books showed the domestic surroundings of the person to whom the book was presented, and in that way they often got extremely interesting details. Then there were many interesting specimens of furniture scattered about the country in many old houses of pre-Elizabethan times. He recollected seeing a distinctly original bedstead at Lord Mount-Edgcumbe's house, Cothele, which had certainly never left the house since the time of Henry VII. He was sorry also that Mr. Dawber did not give a little space to the inlaid work done in Elizabethan times. Elizabethan furniture was often extensively inlaid. They found inlay in the round done in the most charming way at Hardwicke Hall, and done apparently in view of the visit of Elizabeth there, for a sort of complimentary message had been let in on top of the table. There was the Royal device and Cavendish arms, with supporters, two stags, and twining round them were roses and the words:—

"The redolent smell of eglantine
We stags exalt to the divine."

There was also an immense amount of furniture of the time of William III. in the same house. Knowle House was also most interesting in the way of furniture. He thought perhaps that Mr. Dawber went rather far in saying that design was altogether given up in the middle of last century, because it was then reviving. It began to revive before the Great Exhibition. In fact, the Exhibition was the outcome of the sense in a number of people of the great want of making design in the articles of life better understood. But there was a great deal of admirable work provided between 1850 up to the end of the century. In fact, they had only to look back to the horrors which

appeared in the shops when he was a young man to look now at an ordinary shop in Tottenham-court-road and congratulate themselves. A great deal of the furniture produced by the ordinary furniture-makers today might not be of a very high quality or of a high quality of design, but at any rate it had the right intention. It had the right general notion of what design should be, and did not include the horrors of the early half of the XIXth century. He thought architects would do well to show some interest in the designs of the furniture to be used in the houses they built, because they were very greatly interested in the effect of the total result of a house, and that would always depend to some extent on the accessories.

Mr. Maurice B. Adams said if modern work in this regard was referred to at all there was one period of architecture and furniture which Mr. Dawber had not alluded to but which always struck him as extremely interesting—he meant when Burges, Mr. Street, Mr. Eastlake, and Sir Arthur Blomfield interested themselves in designing furniture, some of the designs so produced being extremely good, and which in the history of furniture certainly ought to claim adequate recognition if they were to consider the work now generally associated with the Arts and Craft School. If they remembered Burges's house at Kensington he thought they would agree with him that it was one of the most remarkable buildings of its kind in this country, and one which he would like to see acquired as a national monument—it really was a most wonderful piece of work, thoroughly worked out from beginning to end by one of the most distinguished architects of the XIXth century. In that house and in his office at Buckingham-street Burges carried out the idea which William Morris, Rossetti, and Burne-Jones also realised—that they could have perfectly plain furniture and then paint it most beautifully inside as well as out, and make it extremely interesting and a supreme work of art. Burges, in his house, acting on the lines of the painted mediæval armoire at Bayeau, painted a series of bookcases in his library beginning "A was an architect, B was a builder," and so on all round the room, and then he employed in doing this Marks and Sir E. Poynter, while inside the furniture were painted most lovely representations of plant life, all part and parcel of the story, and, to his mind, carrying furniture to a much higher plane than the exquisite cabinet-work of Chippendale and others which they had seen presented. In reading Burne-Jones's life they would find that his idea was to design something exquisitely beautiful in itself, well proportioned, and all that, but the object of the thing mainly was to produce a surface on which most beautiful painting could be placed. Whether or not it was desirable to paint chairs and such-like articles was another matter, but he did think that, in a history of furniture up to the present time, it would be a pity if they left out all mention of such work as that belonging to that much-abused period of the Gothic revival. There was some very nice modern work at that time by Bruce Talbert, and Brydon followed much in the same way. They were friends and Scotchmen, and they did some exceedingly nice work which would bear criticism from the modern standpoint. There was very much more intelligence and thought in it than there was in the semi-barbaric rabbit-hutches which they saw with huge iron hinges and with interiors hard to get at, and which were of little use. It was a subject which he had taken a great deal of interest in all his life. Some years ago when his friend, Mr. Aldam Heaton, read a paper on "Furnishing" it was rather disparaged by one or two members of the Institute as being a subject which practical architects could not turn their attention to. He thought that was a great mistake, and when they went into some of the modern houses which architects were building all over the country they found that where the architects had been allowed to have a voice in the furnishing of the house the result was exceedingly satisfactory, whereas, on the other hand, they found in some houses a mass of the most trashy furniture which could be introduced. But in designing furniture for a house they must remember that the persons who used them must not appear incongruous, and the present unfortunate system of rapid changes in the fashion of dress made it extremely difficult to design anything which would exactly accord with living modes and manners. Mr. Macquoid had done well to insist that it was not only the architecture of the period which influenced the furniture, but also the costume and style of the people who used it. He had known Mr. Dawber for a great many years, and he believed the first time he came across him was when he was making some sketches of furniture in East Anglia in ancient buildings. He was not surprised to find that Mr. Dawber was still interested in furniture.

Mr. H. D. Searles-Wood said he would like to throw out the suggestion that at the Congress a visit to Burges's house and perhaps some other houses might be arranged.

Mr. A. Penty said it always struck him that little of the old furniture was wholly satisfactory. They saw a chair, for instance, of which the legs were beautiful, while the back was the reverse of beautiful. In some cases they got a real feeling of vigour, but with this vigorousness there was a lack of refinement, and then, again, in other work they got refinement but the vigour was gone. He could not but feel that somehow or other there never seemed to have been the same standard of design maintained in furniture as in architecture. He did not know the reason for that, but so it always seemed to him.

Miss E. Rowe said that Mr. Macquoid had alluded to the spindle ornamentation being too early for 1620, and she would like to ask Mr. Dawber whether in his observations he had noted that in Nash's "Mansions of England" there was a drawing of the Moncaunte room showing the interior porch, and that was, she believed, about 1580. He would see that the spindle ornament was given in that.

The vote of thanks was heartily agreed to.

Mr. Dawber said that when he undertook to read a paper on "Furniture" he realised that the subject was an immense one, and covered an enormous amount of ground. The speakers, with one exception, had been kind enough to tell him of his shortcomings, and to a certain extent he knew them. It was quite impossible to say everything, or even to trace properly the history of furniture, in the time he had at his disposal. He knew Hardwicke Hall very well indeed, and had sketched the furniture. He could not quite agree with Mr. Macquoid as to what he said about the split baluster of the Yorkshire chairs. He had two Derbyshire chairs which were better examples than those he had shown, and they had the split balusters, and he put them down at 1610 to 1615, and all the researches he had made led him to the belief that that was the real date. At the same time he admitted that it was with hesitation that he ventured to express his opinion before such an authority as Mr. Macquoid.

The New Premises.

The Chairman said that a meeting had been called for the following evening to consider the question of acquiring new premises for the Institute, but, as Mr. Belcher was indisposed and one or two little troubles had arisen, the Council felt that all they could honestly do would be to postpone the meeting. They would have to meet, because the meeting had been advertised, but the only business which would be transacted would be the adjournment of the meeting. On Monday, March 5, a special general meeting would be held for the election of the Gold Medallist, to be followed by a business meeting for the election of members. Mr. Saxon Snell had given notice that he would call attention to the Henry Saxon Snell Bequest and as to what steps had been taken by the Council to formulate a scheme for the proposed scholarship or prizes, and also that he would move a resolution.

COUNCIL SCHOOL, TEVERSAL, NOTTS. A new council school has just been opened at Teversal. It affords accommodation for seventy-five children, and the main room can be divided by a partition. There are also cloakrooms, and the school itself is surrounded by a playground. The cost has been 1,700*l*. Mr. J. Sander, the County Architect, prepared the plans for the work.

ROYAL ACADEMY LECTURES.

AT his fourth and concluding lecture on "Reason in Architecture," delivered on Thursday last week, Mr. Jackson said that it might be objected to the argument of his preceding lectures—if all architecture was based merely on the fit expression of structure, what room was left for art? That was a vital question to which in fact the previous lectures were intended to lead up. Sound building was not everything; and though architecture must rest on a reasonable basis and not on caprice, it did not follow that no room was left for art. Everything depended on the spirit in which the suggestions and opportunities of structure were received; and that depended on whether the artistic spirit was or was not present in the builders. The suggestions of structure might be treated gracefully or ungracefully; some ages were artistic, others utilitarian and commonplace. To a dull mind the use of recessed orders of arches would have suggested nothing but economy of material; the artistic mind found in it the suggestion for mouldings and the grouping of pier-shafts; and the practical difficulties of vaulting, which led to the introduction of the built-up vaulting-rib, were by the artistic mind etherealised into the roof of King's College Chapel. In like manner the weighting of buttresses practically required nothing but a mass of stonework, but it was treated as a pinnacle and became a feature of beauty; and so with the flying buttress. The gradual approach to each other of the original small narrow windows of the Romanesque builders, till there was but a thin shaft of stonework left between them, led to the blending of the lights into one window, and to the introduction of tracery to support the leaded glass—a feature as unexpected as it was admirable. But for the artistic spirit the development of the capital might have stopped at the Byzantine cushion form. A recent writer on architecture in the *Edinburgh Review*, he noticed, had maintained that the new development in architecture after the fall of the Roman Empire was owing to the ideas of the new races who had supplanted the Romans; that they must have had the idea of this architecture in their minds before they built it; and so on. That, he could only say, was putting the cart before the horse. At the root of each fresh departure in architecture was a reason founded on convenience and quite outside of æsthetics, and a reason which refused to be lost sight of; when it was lost sight of, the style decayed and fell. Construction to the architect, in fact, was like natural form to the painter; as long as it was correctly expressed, there was room for development beyond the structural basis. The solution of the problem would be different with different people, and that solution demanded to be expressed as much as the constructional basis itself. The marble quarries of Greece suggested trabeated structure and fine mouldings; the Romans, who used the arch, erected in their aqueducts splendid arched structures; their weakness was the retention (in other erections) of trabeated forms where they had no constructive meaning. There was something in personal character and social conditions which influenced architectural development. During the XIth and XIIth centuries clerical influence induced a certain conservatism, but after the XIIIth century, when the lay influence came into building, the development was wonderfully rapid. The next generation after the Norman nave at Peterborough saw the west front built, and after that a whole succession of original styles was developed in three and a half centuries. Contrast this with the case of the Roman arch, which was just as good a suggestion in architecture, but was not developed into anything further. The Roman Empire, like the Roman architecture, bore the stamp of Rome everywhere, and every colonial city was but a miniature of Rome: and so the central type governed everything in Roman architecture, which hence became monotonous. The time of jarring nationalities succeeded, to whom the monotony of Roman architecture was unsuitable; architecture must in any case have taken a new direction. Gothic architecture was the style of individualism; it could take almost any shape and yet remain the same style, and was therefore exactly suited to the social instincts of the period; but the influence of construction was behind all this.

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No new style was ever invented; it came about unconsciously: and to parade what was called "Art Nouveau" as a new style was to ignore all the teaching of history. All the revivals of modern times were of outside appearances only; sash windows were Classic, it was understood, mullioned windows were gothic; precedents were wanted for everything from Palladio to Pugin; chimnies were no part of original Classic architecture; they were therefore to be disguised as vases or obelisks. This idea of architecture had been accepted by the public, and rules for carrying it out had been formulated by the authorities who had control over our art schools. In lesser arts the same principles applied; forms should be founded on utility, in which sense the humblest utensil might have interest; the forms of old pottery, and of the bronze vessels found at Pompeii, which were generally admirable to the eye, were founded on convenience and utility. The same principle should hold good in what was called "Applied Art." Why were we to see floorcloth looking like squares of tiles, and brooches made in imitation of horseshoes, or a diamond brooch in the shape of a pig? That was not design, it was the unintelligent imitation of form. To return to architecture, how did our modern practice accord with the fact that new materials were coming into use? There were plenty of constructional suggestions in these days, but we still stuck to our old architectural forms. There was a demand for glass shop fronts, and they had to be supplied; yet we still continued to build above these glass fronts as if there were no glass below. We should face the facts; show the girder and the iron column which carried it, and not conceal the girder and stanchions behind a mask. And it was inconsistent that the upper portion of a building should ignore the construction of the lower portion. Projecting oriels and domes and other such features were impertinences in a building of which the real construction was iron. Why not treat iron in some such way as wood used to be treated in half-timber work? Iron construction really resembled carpentry a good deal; why not make the superstructure of a shop a visible iron framing, with the iron exposed to view as the wood was in the street buildings of Chester? Of course we could not tell how long iron was going to last; and apart from any special demand being made for it, he thought an architect who wished to go down to posterity would be wise to keep iron out of his buildings as much as possible. But to see miles of streets resting on concealed girders was a lesson to us, at all events, that we had thrown away an opportunity.* The recollection of constructional basis might also act against the common mistake of crowding buildings with ornament, so that the eye in vain seeks for repose in any plain spaces. Terra-cotta had had a bad influence in this respect; a fine material in an artist's hands, it had encouraged the use of cheap repetition of ornament. Self-restraint in ornament was one of the lessons much needed in this day; the sense that in this respect, often, the half was more than the whole. One temptation to pretentiousness in ornament was that it was popular; and moreover it saved thinking; it was easy to cram on ornament. If all architectural design were referred to the test of construction, ornament would take its right place, which should be like that of the drapery to a statue. Ornament should have structural meaning too; as applied to a capital it should have an upward and supporting tendency; in friezes and diapers it should have a flatter character. Doorways invited decorative treatment; and in the earlier Gothic doorways of France the tympanum was sometimes decorated with sculpture which was thought of sufficient value to be preserved and reset in a later building. Windows also were opportunities for decoration: in a typical Venetian palace the decoration was nearly all concentrated on the windows. That was an example of ornament rationally applied to emphasise important and permanent features. Good ornament was too precious to be wasted where it was not wanted; and when ornament made us forget what it decorated, it was an excrescence. All architecture should be brought to the bar of reason, not of precedent. The latter was easier to follow, no doubt, but it only led us round and round in a circle. Unfortunately it was the element most generally understood, and an architect who deserted precedent would be likely to find himself unpopular. But there was already a movement in favour of greater liberty. The search after character was to be recognised now as an object, though it was sometimes carried too far, leading to an exaggerated simplicity or a forced effort at originality; the latter a great mistake; the dull proprieties of the old school were preferable to that; originality must have an obvious reason. The real value of the study of old architecture was to form ideas of style. The letter of old work was dead, though the spirit survived. But there were still many people who looked on imitation as the test of architecture, and would gravely ask you where such and such a feature "was taken from."* Ancient architecture should be to the modern architect what ancient art was to the sculptor and painter—a subject for study, not for imitation. Imitation had only the same kind of value in architecture as "Elegant Extracts" or dictionaries of quotations in literature. The modern architect should go straight on his own way and be himself, and bring his art into accordance with modern requirements. If he was required to use iron construction, let him treat it accordingly, and quit brick and stone forms. Each one who followed this principle would do something towards putting modern architecture on its proper basis—that of reason.

On Monday Mr. Colton gave the first of two lectures on Sculpture, to be followed by one from Mr. Goscombe John; but we defer a report of the first to next week, when a brief résumé of the three lectures will be given.

MICHELANGELO'S WORK AT SAN LORENZO AND IN THE SISTINE CHAPEL.†

IT would, of course, be an impudent and profitless proceeding to attempt to deal in one short paper with the personality and work of so revolutionary a figure as Michelangelo proved himself alike in all the arts, but, having had occasion for another purpose to have some slides sent from Italy of the Sistine Chapel roof, and being able to add to these a few of the master's own sketches for his work at San Lorenzo, it seemed to me that it might be possible briefly to consider some of his methods, and find, at any rate in his architecture, a moral for our own times.

For his times and ours are not so dissimilar as they may at first sight appear. In both we find the same struggle going on—the struggle of the romantic spirit to assimilate classic forms. In the work of Brunelleschi, Alberti, and the earlier Renaissance architects we see them employing classic detail, as a decorative adjunct only, to buildings in plan, substance and idea romantic and picturesque; and the result is always graceful and charming, like the Italian temperament itself. Just as they played with Gothic architecture, producing, without any real appreciation of its relentless logic, things of refinement and exquisite beauty, like the façades of Sienna and Orvietto, so they now played with their Classic orders and entablatures, encrusting them with the graceful arabesques of their fancy or the delicate grotesques of their humour.

But while this was happening the scholars were at work on their own revival of learning, and most unfortunately, as it seems to us now, they hit upon the writings of that pedantic old Roman, Marcus Vitruvius Pollio. From that moment they began to invade the domain of architecture, much as in church work the country parsons, with knowledge culled from Rickman's styles and Parker's glossary, do to-day, and then as now, only too many architects were ready to follow their directions. Instead, therefore, of applying to the ample Roman remains about them their senses and emotions, and trying to get at the real significance of the work, they accepted the authority of this Roman architect, whose writings they partially understood, as the final and ultimate test of all good building. They did not even stop to inquire whether what was good in the Ist century under the Roman Empire still remained perfect in the XVIth century under the Christian Church, any more than our own cathedral committee seem to have considered whether work of the XIIIth century adequately expresses the thoughts and ambitions of the XXth. This, then, was the state of affairs when Michelangelo first turned his attention to architecture.

And, to digress for one moment in order that the moral may be more clearly pointed, I think we have reached to a not very dissimilar state ourselves. When the Romantic spirit swept over Europe in the early XIXth century its strongest manifestation was in the revival of Gothic architecture. Of this revival we are still feeling the effects, even in those of our buildings which purport to be classic. It shows itself in our love of picturesque detail; in the tower, without which no modern municipal building seems complete; in the accidental manner in which we attach to classic façades such non-classic features as turrets, high-pitched gables, steep and semicircular pediments. In fact, we are reaching a stage of so-called classic design so free from the dignity and repose which are of the essence of the classic spirit, that many who love that spirit, which our own XVIIIth century architects—our Chambers and Gibbs, made so essentially English when all the world was given over to rococo licence and barbarism—many advocate now the practical renunciation of all self-consciously designed detail at all, and bid us to rely for beauty on the abstract, bald form our construction leads us to, together with such added beauty as may be attained by judicious choice of material and surface. This is, indeed, a hopeless attitude—one which, if adhered to, may *not*, indeed, prevent us from producing satisfactory domestic architecture on a small scale, but will for centuries prevent us, until new forms have grown up with all the present significance of the old classic ones, from interpreting in our architecture the pride and grandeur of our national or even of our civic life. No; the real danger, I think, lies in the possibility, owing to the intervention of the Gothic revival and the break which it has caused with our own English classic tradition, that some genius like Michelangelo, only half endowed with the classic spirit, but strong enough, like him, to impose his fashion upon us, may arrive, and by combining the old detail into new forms, as he did, send us still further on the road of this free and freer Classic, till we produce in the XXth century the very rococo mannerisms we refused to admire in the XVIIth and XVIIIth.

For this was the well-known result of Michelangelo's work at San Lorenzo.

He was commissioned to add a new sacristy as a monument to the Medici on the northern side of the chancel to balance Brunelleschi's sacristy on the southern side. He was also commissioned later to build on the western side of the cloisters a room for the famous Laurentian Library—the collection of books and manuscripts made by various members of the Medici family. Both these commissions came from Clement VII., a Medici Pope. Another Medici Pope, Leo X., had, earlier, as the result of an open competition, commissioned him to erect a new façade to the church. To this day, however, this has not been built, though Michelangelo

* It is possible that another way out of this may be found, by persuading the better class of shopkeepers to believe that in the long run a good architectural treatment of a front may be a better advertisement than the whole sheet of plate glass. We can give one instance in point, of recent occurrence. An architect was desirous to carry the upper part of the front over a shop on a genuine elliptical arch over the ground floor window, instead of inserting a girder and filling the whole space with plate glass. He showed the client that the architectural effect was much better and more complete in that way, and asked him if it was worth while to spoil the whole front for the sake of getting in two triangular bits of plate glass which were not really necessary. The argument was accepted.—ED.

* We can give one amusing and typical instance of this. When the National Portrait Gallery was in progress, we received a letter from a correspondent (if we remember right, he was an architect) complaining that the late Mr. Christian, in carrying out this building, which is a kind of annexe to the National Gallery, was not repeating the capitals of the National Gallery correctly, but was introducing a modified classic capital different from them, and urging us to make a public protest against this nefarious proceeding.—ED.

† A paper read before the Liverpool Architectural Society on Monday, February 5, by Professor C. H. Reilly, M.A., A.R.I.B.A.

wasted several years of his life quarrying marble for it. The blocks are still to be seen, I believe, at Carrara. Till he commenced the sacristy, this—the proposed façade—was his only architectural work as far as we know, and the model for it, which can be seen at Florence, shows what a jejune and spiritless thing it was—a mere frame for sculpture.

But, coming to the sacristy itself, which, when forty-seven years old, and protesting that architecture was not his trade, he was compelled to undertake, we find it to be in plan a simple square compartment of 40 ft. either way, exactly similar to Brunelleschi's old sacristy across the chancel. In the centre of one side is a square recess of 16 ft. covered with a semicircular dome on pendentives. The main chamber is of very lofty proportions. It consists first of a cube of 40 ft. to the top of the attic cornice. The square on plan is then reduced to a circle by means of large pendentives at a height of 62 ft. above the ground, above which, again, is a semi-circular dome carrying the lantern. In each of the four walls above the attic, and under the circular arches dividing the pendentives, are four windows, from which the interior receives its light, and for the purpose of lighting the monuments below the light could not be better distributed. The acoustic properties of the building are, however, the very reverse of this, but for these it was not designed. Like most Italian buildings, the structure was complete in brick first, and then overlaid with its marble and plaster covering. The main scheme of this covering consists in a lofty Corinthian order and attic in dark ashen grey "pietra serena," with the interstices filled with white plaster or white marble. So far it is very simple and very satisfactory, the dark cornices, pilasters, and archivolts, although, as we shall see of Michelangelo's "improved" profiles, nobly outline the shape of the interior. But when this was done the architect set about to design a scheme of doorways, niches, and subsidiary pilasters, which have no organic connexion either with the uses or structure of the building, or the idea of a mausoleum. At the end of each wall is a square-headed doorway with a curved pedimented niche above it, so that there are to this one compartment eight apparent entrances. The detail of this door and niche, combined into one feature, is unlike anything preceding it in architectural history. It is a highly complex design executed, like the monuments themselves, in polished white marble of exquisite finish, but it is not till you see the mouldings plotted that you realise to the full all the deliberately designed variations which have been introduced. It must not, therefore, be considered that, because Michelangelo was loth to undertake this work, he did not, when he had once set his hand to it, make the architecture as intensely personal as the sculpture. Like it, it is overladen with thought and serious effort. It is, and it was meant to be, part of one whole with the sculpture. His sketches show this very clearly, and no doubt it is difficult for us nowadays to form a correct estimate of the architecture when only two out of the fourteen niches are filled.

On either side between the main black pilasters containing the doors are the monuments themselves. They each consist of a lofty basement, in front of which is the curved sarcophagus, with its reclining figures, and a main story divided into three niches by four coupled pilasters. The centre niche in each case contains the seated figure of the duke or captain, and is square-headed. The two outer niches, which are shallower, and, curiously, have no outer pilasters to contain them, are finished with curved pediments. These pediments, together with the curved sarcophagus, form an interesting triangular composition. This part of the work, as may be seen by comparing the mouldings with those of the library, is twenty years later than the preceding, which was finished in 1529. The enriched mouldings, than which no more exquisite ones exist, vary in either monument, as do the capitals of the pilasters, and, like them, have been thought to be part of some subtle allegorical scheme. Whether this is so or not, they certainly form an admirable foil to the broad surfaces of the figures.

But, considering this architectural background as a whole, and allowing for the pilasters being finished with candelabra or similar ornaments on the curious pedestals above the cornice, it must be admitted, even when we have accepted the artificiality of the scheme, that the scale is trivial. Perhaps it was purposely reduced in an attempt to enhance that of the sculpture, but, if so, it is only another proof of amateurishness.

Considering these things, it is interesting to note what in a critical age, when artists and men of taste abounded, was the effect of this architecture on Michelangelo's contemporaries. Vasari, himself an architect with no small practice, says: "Michelangelo wished to build the new sacristy upon the same lines as the older one of Brunelleschi, but at the same time to clothe the edifice with a different style of decoration. Accordingly he invented"—mark the word—"for the interior a composite adornment in the newest and most varied manner, which the antique and modern masters joined together could have used. The novelty of his style consisted in those lovely cornices, capitals, basements, doors, niches, and sepulchres, which transcended all that earlier builders working by measurements, distribution of parts, and rule had previously effected, while, following Vitruvius and the ancient relics, such men were afraid to supplement tradition with original invention. The licence he introduced gave great courage to those who studied his methods, and emboldened them to follow his path. Since that time new freaks of fancy have been seen, resembling the style of arabesque and grotesque more than was consistent with tradition. For this emancipation of the art all craftsmen owe him an infinite and ever-enduring debt of gratitude, since he at one blow broke down the bands and chains which barred the path they trod in common." Knowing where this path led his successors to, we may devoutly hope no one with a similar influence will point the way for us.

Of the figures themselves it is perhaps presumption to speak. The first sight of them, particularly of the seated figure of Lorenzo, as Rogers has well said, "fascinates and is intolerable." Unlike Greek sculpture, they have a tragic force, a sense of brooding and destiny, making them, while intensely personal, sublime and remote in their austerity. The two dukes sit, the one easily, gracefully above the immovable forms commonly called Night and Day, and the other, generally styled Lorenzo, with hand to chin, rapt in intense thought, above the half-stirring figures of Dawn and Twilight. The dukes do not pretend to be portraits, and are in their contrasting attitude and bearing part of the larger allegory of time and destiny contained in the figures below. These latter, awkwardly poised as they are on the elliptical surfaces of the sarcophagi, are so full of power and thought that, like the figures on the Sistine roof, they seem elemental forms, beside which the architectural and decorative feature, the very building itself, in a little while, sinks into insignificance. "It is easy," as Symonds says, "to remark that their strained postures and writhen limbs have perverted the taste of lesser craftsmen. Yet if Michelangelo was called upon to carve Medicean statues after the sack of Rome and the fall of Florence—if he was obliged in sober sadness to make sculpture a fit language for his sorrow-laden heart, how could he have wrought more truthfully than this?" To imitate him in both sculpture and architecture without sharing his thoughts was the real decadence. That this was something of his meaning is shown from four lines of verse he sent in reply to a friend who tried to compliment him on the lifelikeness of his figure of Night. Night is speaking:—

"Dear is my sleep, but more to be mere stone,
So long as ruin and dishonour reign.
To hear nought, to feel nought, is my great gain.
Then wake me not; speak in an undertone."

Concerning the actual technique of the carving, whether the figures are finished or not, there has been ample controversy. To me it seems clear, as has often been suggested, that parts have been left with roughened surface purposely to hold the eye, while other parts have been finished to the glossiest polish so that the eye may glance freely from them. On the figure of Day, for instance, the planes are all broad and flat and the surface slightly rough, so that the eye can study the figure carefully and take time the while, whereas Night is finished to highest polish, and can only be seen, as it were, in flashes. If this was Michelangelo's intention, we have the beginning of that method of suggestion in stone which Rodin has carried to such remarkable lengths. But it must be remembered that in all Renaissance sculpture there is an attempt to express individuality, which is quite foreign to Greek work. Michelangelo particularly, with his passionate love of the human figure, while contenting himself with a type for the face, strove to make the body suggest every thought and emotion the human mind might seek after; and, feeling that this was the highest limit of art, as in painting he would have nothing to do with landscape, so in his architecture he would not permit any but the most conventional of wreaths and enrichments beside his sculptured forms.

The other and purely architectural undertaking at San Lorenzo was the construction of the Laurentian Library over the western cloister and the vestibule with staircase leading to it. If Michelangelo had been an architect by instinct and training, rather than by compulsion, he would not in this case, any more than in the sacristy, have adopted the plan suggested to him by his clients. But, having once conformed to it, in both cases his architecture was reduced for him to little more than a system of panelling. The chief interest of the library, then, which is a long, narrow compartment some 110 ft. by 30 ft., and of the vestibule adjoining, some 30 ft. square and nearly a double cube in height, is the further development they show of his distinctive style and the numberless pitfalls he was preparing for his followers. As others have pointed out, this vestibule suggests rather an exterior than an interior. The tall Doric columns, if such they can be called, set back in pairs in rectangular recesses in the wall, serve no purpose that pilasters would not more effectively do, and at the same time preserve the continuity of the wall surface.

It is amusing to note what Vasari, who completed the building for Michelangelo, and may have been responsible for some of its eccentricities, says: "In the library of St. Lorenzo Michelangelo afterwards made a plainer demonstration of his intention by the splendid distribution of the windows, the arrangement of the upper chamber, and the marvellous entrance-hall into that enclosed building. The grace and charm of art were never seen more perfectly displayed in the whole or in the parts of any edifice than here. I may refer in particular to the corbels, the recesses for statues, and the cornices. The staircase, too, deserves attention for its convenience with the eccentric breakage of its flight of steps, the whole construction being so altered from the common usage of architects as to excite astonishment in all who see it." This passage shows well the mastery which Michelangelo's false architecture achieved even in his lifetime, for when eccentricity is praised and astonishment made an aim, Art the coy maiden is likely to make way for the bolder creature, Artifice. And, indeed, this is what happened, for the gigantic internal orders unrelated to the structure, the superimposed pediments, the baluster architraves, here first used, became a fashion for the next two centuries in most parts of Europe, and so entirely was the restraint of precedent discarded that anyone who could put a classic feature to a new and strange use was sure of fame. But in his own work, and even in the additions by Vasari, we find all these features in themselves so well proportioned, so delicately moulded and refined, that, though nothing can remove the sense of unreality that always attaches to these rooms, after you have been in them awhile you forget that any other kind of detail exists outside. It was his followers, to whom, as Vasari said, he had opened a path hitherto barred to them, who took these new features and applied them everywhere and in every scale and proportion, in much the same way as the White Star gable end is used nowadays on every Free Library, who produced the decadence.

Of his work in the Sistine Chapel we shall be better able to judge from the photographs. It is a long, narrow room, 132 ft. by 44 ft., and 68 ft. high. It is vaulted with a single tunnel vault in plaster, with cross vaults to

the windows. When Michelangelo was called upon by Julius II. to decorate this vault in 1508—that is, when he was thirty-four years of age—the room was perfectly bare, except for a dado of primitive frescoes and a row of twenty-eight Popes by Botticelli. Over the altar, where his "Last Judgment" now hangs, were three small frescoes by Perugino. In this building Michelangelo locked himself up, dispensed with the scaffold Bramante had somewhat clumsily provided, constructed a new one of his own, and in less than four years covered the whole roof with the portentous vision of prophets, sybils, nude figures, and episodes in Old Testament history we think of whenever the Sistine Chapel is mentioned. I do not mean to dwell on this marvellous creation, except to point out that, just as at St. Lorenzo he treated architecture as a scenic addition to his sculpture, so now, discarding all the ordinary canons of decoration, and caring nought for the building he was called upon to enrich, he produced, not a painter's or an architect's conception of a painted ceiling, but a sculptor's dream of 343 mostly nude figures in every conceivable attitude and combination. For this he had certainly two very good excuses—the first, that, as architecture at St. Lorenzo, so painting here, he protested, was not his trade; and the second, that the building itself was a barn-like structure, with no architectural features to command respect.

The result is that on looking up the real roof seems to have been removed and a new hypæthral one of his own imagination constructed in its place. This rises in great arches from pedestals between the windows. Through these arches is to be seen the sky, and in the sky are visions of the Creation, the Deluge, and the Fall. On the pedestals from which the arches spring are seated youthful genii, and below them, with attendant children, crouch the prophets and sybils—colossal figures some 12 ft. high in sitting posture, and, painted as they are on the quicker curve of the vault, they represent in drawing perhaps the greatest technical achievement of man.

Most of us are familiar, at any rate from illustrations, with this thunderous vault, its angry titans, and its visions of perfect human beauty as in the form of Adam receiving life from the Creator. We know it, but we never think of it as pertaining to a building, as part of a surface decorated. Indeed, with such work on such grounds it would be absurd to criticise. Starting from them, it has risen to another plane, even to another sphere, and the result is a thing apart, divided by the impassable gulf of Michelangelo's genius from the rest of the world. So that the painters who followed him, like the architects, but for a different reason, were bound to fail. Michelangelo could only succeed on the path he took by creating a new heaven and a new earth, and that is not given to all men to do.

PROPOSED NATIONAL COLLECTION OF DRAWINGS OF ANCIENT ARCHITECTURE.

Two or three weeks ago we published a note stating that the Spiers Testimonial Committee had handed over to Mr. R. Phenè Spiers the sum of 79*l.*, being the balance in hand of the fund after paying the costs of the medallion, presentation of books, dinner to Mr. Spiers, and publication of his volume of essays, "Architecture East and West." We now understand that Mr. Spiers proposes to hand over this sum to a small committee, consisting of himself, Professor Lethaby, and Mr. R. Weir Schultz, to deal with as the nucleus of a fund, to be added to by subscription or otherwise, for the purpose of forming a collection of drawings of ancient architecture in continuation of the work of the Spiers Testimonial Committee, such drawings to be deposited at the South Kensington Art Library or at the British Museum, and to be available for access by students of every kind. The committee now invite architects and others who possess such drawings to place them at their disposal for this purpose.

They will also be glad to receive any information from architects or others interested in the proposal as to the existence of such drawings, or of sketch-books or other material of a similar kind. Photographs of buildings which no longer exist or which have been materially altered will also be received for the collection.

It has long been felt that in the past there has been a great loss of valuable records owing to the want of suitable means of collecting and preserving the same when such have no longer any particular use or value to the owners.

The committee have reason to believe that such a collection would be very much appreciated for purposes of reference, and arrangements would be made for preserving and cataloguing the same in the names of the authors and donors.

The committee will be glad to receive notification of available drawings, and will make arrangements for the collection of these. Communications to be addressed to Mr. R. Phenè Spiers, 21, Bernard-street, Russell-square, London, W.C.

Mr. Spiers himself, Mr. E. F. Knight, Professor Lethaby, Mr. Schultz, Mr. Sidney Barnsley, Mr. A. H. Christie, Mr. E. W. Gimson, Mr. F. W. Troup, Mr. Cecil Brewer, and others have already promised drawings.

Sir Aston Webb and the other members of the testimonial committee have expressed their cordial approval of the proposal.

Sir Aston Webb writes:—"I need hardly say I entirely sympathise with the proposal to collect reliable records of our fast vanishing ancient buildings, and shall be pleased to place any records I have at the disposal of the committee, or to join in contributing to the necessary funds. I think Mr. Spiers' desire to place the balance of the testimonial fund as the nucleus of a fund for this object is a most generous one, which I am sure all will appreciate."

We need hardly say that we are entirely in sympathy with the scheme; adding also our appreciation of the generosity of Mr. Spiers in thus turning the surplus of the testimonial fund to account for the general good of the profession.

THE ROYAL SANITARY INSTITUTE.

A SESSIONAL meeting of this Institute was held on Wednesday last week at the Parkes Museum, Margaret-street, W., the chair being taken by Mr. O. Claude Robson, Engineer to the Willesden District Council.

The Intercepting Trap.

The subject for discussion was: "Is the Intercepting Trap a Failure?" and the Chairman, in calling upon Dr. W. Butler, Medical Officer of Health, Willesden, to open the discussion, said that physically and materially the subject was a small one, but it affected a very large principle indeed. It affected not only the comfort and health, but the actual life of the community at large, as doctors would no doubt tell them. The interceptor was an old friend, but they had not been favoured as much as they would have liked with full discussions of the matter, and he believed that the present discussion would prove of much value, not only to sanitarians but to the public at large.

Dr. Butler first considered the purpose of the interceptor in a modern system of drainage, after which he said that he should endeavour to show that the conception of a drainage scheme in which the drain was disconnected from the sewer was wrong in principle, and that in practice it was as mischievous as in theory it was faulty. It was based on the assumption that it was safe to have a condition of things in the public sewers that it was unsafe to have in the house drains which communicate with the sewers, and that they might recognise the existence of a danger zone on one side of a trap against which the other was assumed to be safely secured by a seal of sewage. It must, of course, be conceded that the inside of a sewer could never be regarded as a sanitary situation, but from this to the assumption that its gaseous contents might be contemplated as so potently charged with danger that they might not even be admitted to a gas-tight system of tubes having no unsealed opening save to the outer air above the housetops, was a most serious confession of sanitary failure. The truth was that accumulations of considerable volumes of sewer gas were dangerous and insanitary, whether they be permitted to stagnate in the sewers or in the house drains. If the sewers were efficiently ventilated, as unquestionably they should be, there was no ground to suppose that the atmosphere of the sewer was more harmful than that of the house drain, and the disconnection of one from the other was not only harmful, but irrational also. For it presupposed what sanitarily could not be presupposed—namely, a dangerous atmosphere in the sewers; and it was an attempted defence, by means of a trap against this danger, which in its very adoption cast doubt upon the efficiency of the means, since the same were used in the defence of the house against the still dangerously regarded atmosphere of the house drain.

Perhaps the most universally objectionable feature of the siphon was that it prevented the efficient ventilation of the sewers. That the public sewers were inefficiently ventilated in those cases where their communication with the soil-pipe ventilators of the house drains was intercepted, was shown in many ways. It was a common experience with municipal officers that daily complaints were received, during the summer months, of the offensive smells proceeding from the openings to the sewers in the crown of the roadway, placed there originally with the intention of acting as fresh-air inlets to the sewers, and now in many districts being sealed off because they were found to act as vents for the foul gases of an insufficiently ventilated sewer. Visual demonstration of this fact might be had during frosty weather, when a stream of condensed vapour might be observed proceeding from these openings into the sewers. It might also be shown with regard to most sewers that the number of upcast shafts which it had been possible to erect were quite insufficient to cause such a negative pressure in the sewers as should result in anything like continuous aspiration of air into the sewers through the road openings. But, short of effecting this, the road grids became a nuisance owing to escape from them of the gaseous contents of the sewer at the street level, and under conditions, owing to inadequate sewer ventilation, in which these gaseous contents were apt to contain a large admixture of sewer gas. He thought it would not be disputed that what was most urgently needed in respect of most public sewers, was an increased number of exit ventilators intentionally so acting. And could these be provided in sufficient numbers—as practically at present they could not be—the problem of sewer ventilation would be solved, and the atmosphere of the sewers would then be rendered as innocuous as rapid change in the aërial contents of the sewers could render it. Such sufficient numbers of upcast ventilating shafts would be provided were each house drain and soil ventilating pipe in direct aërial communication with the sewers. The aspirating effect of so many outlet ventilators to the sewer, up which the lighter air of the sewer would tend constantly to ascend, would be a rapidly inflowing current of fresh air to the sewers at all lower openings; and thus at one and the same time both the sewers and the house drains would be effectively ventilated and any accumulation of gases of decomposition, either in the sewers or the drains or their escape in improper situations rendered impossible.

The interception of the drains from the sewers, however, had deprived the sewers of what should be their natural outlet and on occasion inlet ventilators. It had necessitated the provision on each house drain of an untrapped opening, situated in a large proportion of cases in immediate proximity to the doors or windows of the house, and acting, if not as often as not, at least with a frequency uncontemplated in the theory of its advocates, as an outlet ventilator to the drain. Further, to provide access to the segment of the drain between the interceptor and the sewer another complication in the shape of a raking arm with a readily removable stopper had had to be added. An inspection chamber was a proper equipment of every drain, but the interceptor, necessarily placed as near to the sewer as practicable, had necessitated the placing of the manhole where the drain was deepest, and where, apart from the consequently increased cost, it necessarily formed a capacious reservoir for the storage of gases at the very site where they were most likely to accumulate owing to the couple of gallons or so of stagnating sewage contained in the

trap at the bottom. Everyone of these complications introduced into drainage systems to meet the exigencies of the interceptor were extremely apt to go wrong and produce nuisance. The interceptor itself was essentially insanitary. It retained within the precincts of the house premises between two and three gallons of sewage which was of that aggravated character which resulted from the undue retention of solids, and thus breaks with the primal principles of domestic sewage disposal. The plating down of the street gratings to prevent the offensive smells from the sewers, which the introduction of the interceptors had occasioned, would, especially where shafts had not been erected in their place, make this forcing of the trap a more frequent occurrence than was contemplated. Where no facilities whatever even for inadequate ventilation of the sewers were provided, the daily recurring increases of pressure of the imprisoned gases must necessarily force them through the yielding traps into the house drains. And this contingency to which every house drain disconnected from the sewer by a trap was subject was a greater danger than was incurred when sewers and house drains were the channels for the constant flow of continuously renewed currents of air. This was a breakdown of the interceptor in its intention, the frequency of which it was impossible to estimate. But it failed in other directions which were not contemplated. A straight pipe with a proper fall showed little tendency to choke, but if in the course of such a pipe an acute kink or bend be introduced, especially if it be of such a character as to remain filled with floating solids, the tendency to become choked at this point would have increased enormously. During last year he had a systematic inspection made of all the readily accessible manholes in his district. These amounted to some 6,745, and comprised the inspection chambers of about a third of the houses in Willesden. In no single instance was a drain found to be choked but at the interceptor, but no fewer than 288, or 4¼ per cent. of all the drains inspected, were discovered to be stopped at this point. In 118 of these cases the manholes were filled with fœtid sewage, emitting its foul vapours through the drain inlet ventilator in close proximity to the doors and windows of the houses, into which they were duly aspirated. In the 170 remaining cases where the drain was blocked, the manhole remained free of sewage, because of another accident of the system—namely, the unstopping of the raking arm, which permitted of the escape of the drain contents to the sewer, and incidentally of the sewer gas into the drain. In 654 cases this accident was observed to have occurred. That was to say, in nearly 10 per cent. of all the drains examined the interceptor, apart from its incidental drawbacks, failed absolutely of its object, the drains in these cases being in direct communication with the sewers. But for the drains to be accidentally in direct communication with the sewers in only 10 per cent. of the houses was much more serious than for 100 per cent. of the drains to be intentionally directly connected with the sewers. In the one case the sewer was adequately ventilated, in the other the sewer air was presumably ten times more concentrated than where all the house drains ventilated the sewer. In the one case, moreover, the sewer air, diluted and comparatively innocuous, found vent above the roofs, and away from all openings to the houses; in the other a concentrated sewer air was laid on at the ground-level at the very threshold of the houses. The untrapped opening to the drain, intended as an inlet ventilator, became in these cases at least a serious danger to health. But to such an extent was the inlet ventilator recognised as a common cause of nuisance owing to its waywardness of acting upon occasion as a vent for foul gases, that it had become common practice to fit it with a mica flap to prevent reflux currents from the still suspiciously regarded drain. In 3,193 cases of those he investigated, however, the fresh-air inlet was wholly unprotected by any properly acting appliance. This might appear a trivial matter, since at its inception no valve was considered necessary. But it must be remembered that admission to the house of air from the interior of the drain was still, and properly, he thought, regarded as dangerous. Most people who would remain unmoved at the forcing of the intercepting siphon would feel alarm at the unsealing of the yard gully, and a crack in a drain pipe covered with two or three feet of clay was regarded as a most serious insanitary condition by people who were undisturbed at an unprotected gaping opening to their drains a couple of feet below their open window.

It might be thought that the result of the inspection of nearly 7,000 manholes yielded exceptional results due to accumulation of stoppages long unrecognised. It was true that in many of the stoppages there was evidence of antiquity in the insanitary condition discovered, but in many parts of the district there had been previous systematic inspections which yielded results quite as bad, though in lesser numbers, owing to the more limited area of investigation. Nuisances of the character discovered were, moreover, constantly being abated, being, as they were, the natural occasion of prompt complaint. He had, however, had a re-inspection made of about 500 manholes with a view to seeing whether the results yielded by the first inspection were confirmed. The re-inspection was made within eight months of the first survey, and included 216 manholes where originally no defects were discovered and 288 where defects originally found had been made good. In nearly 15 per cent. of the manholes re-examined, the most serious defects were discovered. Both in these and in those primarily discovered the defects were traceable to the interceptor, and the modifications which it entailed. In an examination of over 7,000 manholes it was found that in 9·5 per cent. the interceptor failed of its object of disconnecting the drain from aerial continuity with the sewer. It failed not only of this, its essential purpose, but was directly responsible for a high percentage of blocked drains, and manholes converted into leaking cesspools. The untrapped drain-opening in the forecourt which it necessitated, normally served as an outlet for the emanations of the drain, and set at ridicule all insistence on the need for effectual trapping of yard gullies and the elaborate precautions taken to secure a gas-tight drain.

In the very frequent abnormal conditions where the drain was choked, and the raking-arm patent to the sewer, it was an unmitigated nuisance. It was for these reasons that he was bound to answer the question they were discussing in the affirmative. Dr. Butler concluded by giving what he considered the essential principles of sanitary drainage.

Mr. R. Read, City Surveyor, Gloucester, said that his answer to the question was "Yes." The intercepting trap was patented by Mr. W. P. Buchan, of Glasgow, about 1875, and, without any special investigation, was adopted by the Local Government Board, and introduced into their model by-laws in 1877. Ever since then this official recognition had caused it to be taken for granted by large numbers of people, and had deterred many from investigating the question for themselves. The trap used up the fall required by four or six ordinary pipes, it was inserted at the lower end of the underground portion of the house drain, forming an obstruction therein nearly 8 in. deep to the flow of the sewage, it caused the sewage to deposit from 25 per cent. to 35 per cent. of its solid matter in the trap after each discharge in dry weather, and paralysed the flow of the sewage through the whole length of the underground portion of the house drain. During dry weather the contents of the trap were always more or less putrid, and contaminated both the drain and the sewer to which it was connected. The intercepting trap necessitated in the front of the house, near the front door or windows, the so-called fresh-air inlet, which acted alternately as an outlet and an inlet with every discharge from the drain. A mica or aluminium flap valve was generally fixed to these inlets in order to prevent them acting as outlets, but the constant flapping action accompanying every discharge from the drain very soon damaged this to such an extent that it became quite useless, and the result was that in most cases the householders promptly stopped up the opening to get rid of the nuisance which ensued. The trap was liable to frequent stoppage, and was provided with an inspection chamber, or manhole, to facilitate its clearance; but these inspection chambers were, as a rule, only opened when a serious stoppage occurred, which caused the sewage to show above ground. The great majority of stoppages in modern drains occurred at the intercepting trap, and many of these occurred unknown to the householder, because they cleared themselves by the accumulation of sewage in the inspection chamber and drain, until a sufficient head of sewage was produced to force the obstruction through the trap; the result of these temporary stoppages being that the brickwork of the inspection chamber, amounting to about 4 sq. yds. or 6 sq. yds. area, and a considerable length of the drain became plastered with a slimy deposit of decomposing sewage. When the pressure of the head of sewage was not sufficient to force the obstruction, of course the sewage showed at the yard gullies, and men had then to be sent for to open and clear the drain. The trap was introduced into the lower end of the house drain, on the erroneous assumption that it was a safeguard to the house, but it was no protection to the house at all; on the contrary, it was a useless and dangerous obstruction, which provided at every man's front door the very conditions and dangers which it was the object of modern sanitation to prevent. These traps now formed part of many thousands of existing drains, and while they absolutely prevented the adoption of a proper system of ventilation, they also provided a reservoir of putrid sewage on every house drain to contaminate everything passing through it, and thus caused noxious gases and smells to be generated in the drains and sewers, which could not be got rid of by any amount of flushing of the sewers alone, and the more numerous the traps the greater the nuisance. The trap necessitated the use of at least 50 per cent. more water in the flushing cisterns to the water-closets, and even a three-gallon flush was not sufficient to prevent stoppages, as had been shown by experiments carried out by the Institute. More recently the experiments of Dr. Porter on an actual 6-in. drain in connexion with a factory proved that the intercepting trap could only be entirely cleared out by a six-gallon flush. The great object of a system of drains and sewers was to discharge the sewage at the outfall in the shortest possible time. Why, therefore, should we put an obstruction into every drain to defeat this object? The intercepting trap was wrong in principle, and was no remedy for either a badly-constructed drain or sewer; it could not protect the house from the action of a defective drain, and it was liable to be forced at any moment: the true safeguard to the house and its inhabitants being a sound drain laid with a good fall, gas-tight joints, and properly ventilated, the full size above the roof of the house. On such a drain the intercepting trap was a useless and dangerous obstruction, but its absence allowed the drain to be laid with a better fall, to remove the sewage quickly while in a fresh state, and to keep itself clean.

Mr. W. F. Loveday (Borough Surveyor, Stoke Newington) said he had consistently held the views put forward by Dr. Butler and Mr. Read. There was one little criticism he had to make as to what Dr. Butler said about the faulty interceptor. If they had an interceptor with the cap off, it did not follow that the interceptor was to be condemned as an interceptor; but the bogey of sewer gas and house gas having been considerably exploded in recent years, and bacteriologists being unable to find any germs at all in the gas, the necessity for the interceptor no longer existed. When sewers were properly ventilated the necessity for the interceptor ceased altogether.

Mr. Roechling said that in our imperfect state of knowledge, when we could not assign to every effect its true cause, we could not afford to give up the belief that prevention is better than cure. The escape of sewer gas into the street was less of an evil than its escape into the houses. He did not think the term "intercepting trap" so appropriate as that of "disconnecting trap." Those who wished to urge upon them the abandonment of the disconnecting trap must first prove that sewer gas was beneficial to health, or that the air in our public sewers was always as good as the air in our

house drains, and that every disconnecting trap was an unmitigated nuisance. We were bound to exclude from the house anything which might be harmful to health, but, if it could be proved that sewer gas was beneficial to health, then the necessity for the disconnecting trap was done away with. It was the unexpected which happened, and we must make sure that the air in our house drains would not get polluted by sewer air, seeing that it was impossible to say what the air in our public sewers would be like from time to time. In the case of a private drain, well made and maintained, we could be reasonably sure that the air would be sweet and free from smell, but we could never be sure of the air in a public sewer, and if by any chance the air of the house drain was at fault, then the faults must be corrected. He looked upon the disconnecting trap as a useful tell-tale. They had had the disconnecting trap for twenty-five years, and it had been put down and was being put down every day in large numbers, both in this country and abroad, and there were many millions in use; that being so, was it thinkable that, had the trap been an unmitigated nuisance, it would have been used to this day? It would have been abandoned long ago. Where it had failed, carelessness was generally the cause. There was no such thing as an absolute apparatus, and yet, even according to Dr. Butler's investigations, the trap was efficient in 90 per cent. of cases; just why it failed in 10 per cent. of cases he could not explain. Granting, however, for the moment, that the disconnecting trap was a failure, was Dr. Butler's method a perfect one? He did not think it was. It was well known that pipes were forced by siphonage, or pressure of air. They could not be sure that the flow of air was always constant. From experiments with houses where there was no disconnecting trap, they found that there was no such thing as a constant flow from the street to the house—first it was from the street to the house, then from the house to the street. It was impossible to say that, if houses had no disconnecting traps, the public sewers could be ventilated through them; at one time they might be, but not generally. Owners and tenants of houses looked to the employment of disconnecting traps for the ventilation of their own houses, and they left it to the public authorities to see to the ventilation of the public sewers without recourse to the house drains. As an engineer, he would like to point out that, in works of engineering, they allowed for a strain four or five times more than was necessary, in order to guard against contingencies over which they had no control. Why should that factor of safety be omitted in the carrying out of sanitary works? The interceptor was a convenient and cheap factor of safety which he hoped would not be abandoned. An Englishman's house was his castle, and they ought not to let it be invaded by sewer gas any more than by anything else.

Dr. C. Sanders (West Ham) supported Dr. Butler and Mr. Read. He represented a town where the drains, which had been relaid on modern principles, did not contain pure air. The modern system of drainage provided a stink-hole, and the only remedy at present possible was the one very largely adopted—*i.e.*, the occupiers covered up the inlet ventilator. He should like someone to tell him the difference between sewer air and drain air. Personally, he did not know any difference. He hoped that the bogey of sewer air percolating into the house would, if the methods of Dr. Butler and Mr. Read was adopted, disappear after this discussion.

Mr. C. Chambers Smith (Engineer and Surveyor, Sutton) said he could not agree with Dr. Butler and Mr. Read, and, after Mr. Roechling's remarks, he thought it would be agreed that the bottom had been knocked out of their case. Dr. Butler's main objection to the trap was that it got blocked up, but the apparatus which was perfect and never required attention had yet to be discovered. An intercepting trap was as necessary as a gully trap, and who would say that, because the gully trap got blocked up, it should be abolished? It would be interesting to know the number of gully traps which got blocked in Willesden, and whether Dr. Butler would condemn them, and for the same reason? The point that the fresh-air inlet might be directly under the window of a house was not a strong one, for the objection could be met by carrying the inlet above the eaves of the house roof. Another point was, that the necessity for ventilating sewers had not been proved. Who said they must ventilate them? [Dr. Sanders: The public.] The public did not know anything about the matter, and only wanted the nuisance from sewer grids abolished. There were many towns where the sewers were absolutely unventilated.

Mr. F. Wood (Borough Engineer and Surveyor, Fulham) said that, if used properly and judiciously, the intercepting trap was not a failure; when it was a failure, it was because its application was at fault. The water-closet was a trap, but no one would suggest that this be dispensed with, and the pan left freely open to the main sewer. The trap intercepted the gas from the sewer, and he believed it did it effectually, and if that were the object, then the trap was not a failure. Still, the whole system of house drainage was wrong, and the more one examined it, the more one was convinced of the fact.

Mr. W. Green (Finchley) said that, in his opinion, the intercepting trap was the greatest mistake in sanitation that was ever made, and he hoped that it would be abolished as a nuisance. He had been wondering why in cities where there were no intercepting traps the people persisted in living. Were water-closets always trapped? If not, where was the harm in letting the sewer ventilate through the house drain? He had known drains stink as badly as sewers, and, in his experience, the air of sewers could be kept as fresh as the air of drains. They could get circulation, not only through the drains, but also through the sewers if they adopted the right principle—*i.e.*, to have a ventilating pipe from every house drain, without an interceptor.

A member said he thought the case against the intercepting trap had been a little forced; but no doubt ventilation would be improved if the trap were abolished. As sewer air was so bad, they must protect themselves against it. The trap was not a perfect appliance, and, if drains were properly ventilated, there would be no need for the trap.

Mr. A. Martin (Westminster) said that the subject was very important, and he suggested that it might be practicable to invite written expressions of opinion with regard to it.

The Chairman then proposed a vote of thanks to Dr. Butler and Mr. Read. He considered that the 10 per cent. of stopped drains referred to by Dr. Butler, showing masses of festering filth therein, was ample evidence in favour of their views. Indeed, after Dr. Butler's figures, he thought that even Dr. Buchan might have changed his views. He did not think that the intercepting trap should be considered as part of the house drain pure and simple. Where did the house drain end, and where did it leave off? If two houses drained into one drain, that drain became a sewer. The interceptor should be considered in conjunction with the general system of sewage, and, if that be so, they must remember that one of the first principles in designing any water-carriage system was to remove from all houses or inhabited areas all dirt or noxious matter as speedily as possible. In designing a scheme of drainage, one's object was to see that there was no obstacle or obstruction to retard the rapid flow of sewage to its ultimate outlet. If that be so in the main sewers, why should they in the smaller have these miniature cesspools? The advocates for the interceptor say they are necessary to prevent sewer gas entering our houses, whilst the opponents suggest its passage by the house drains and the upcast shafts connected therewith. They were told that the upcast shaft was a source of danger; in his district he had many hundreds of them attached to houses, and, as far as he could recollect, there had not been more than two or three complaints with regard to nuisances arising from them, and he believed that these were sentimental complaints. The Chairman then proceeded to sum up the discussion.

Mr. Roechling seconded the vote of thanks, which was heartily agreed to.

Mr. Read, in reply, said that the intercepting trap was the cause, to a great extent, of the sewer gas in the sewer. The interceptor caused an obstruction, and the water in the drain dribbled in on one side and out at the other. There was no rush, but stagnation in both drain and sewer, and, as long as that condition prevailed, they would always have sewer gas. If they let the sewage run through clean, they had a sewer with a good velocity, giving no trouble, and they got good ventilation. With the trap in its present position they would never secure proper ventilation, for in order thoroughly to ventilate a sewer one must have the outlets largely in excess of the inlets.

Dr. Butler also replied, and said that, after hearing the discussion, he was more convinced than ever of the utter futility and danger of the trap—it required only a discussion such as they had had to clinch one's opinions on the matter. He was brought up in the orthodox faith as to the value of the trap, and he held to that faith until the force of circumstances drove him from it. There was little to be said for the interceptor on theoretical grounds, and on practical grounds everything was to be said for the abolition of it. He agreed with Mr. Roechling that we must try to keep the sewer air out of our houses, but what he said was that the intercepting trap not only failed to keep the sewer gas out, but was responsible for letting it in. Mr. Roechling advocated the use of the trap because it was a tell-tale. He (the speaker) objected to it because it was not a tell-tale—except on the numerous occasions on which it went wrong.

A vote of thanks to the Chairman brought the proceedings to a close.

CARPENTERS' HALL LECTURES:

SOME POINTS OF ARCHITECTURAL INTEREST IN OUR PARISH CHURCHES.

ON Thursday last week the first of the usual spring series of lectures at Carpenters' Hall, London-wall, on matters connected with building was given by the Rev. Walter Marshall, M.A., F.S.A., the title being "Some Points of Architectural Interest in our Parish Churches," the Dean of Chichester presiding.

Mr. Marshall stated that he proposed dealing particularly with wooden roofs and screens, and, having described in detail the various members of a roof and the use of each, he said that, of the beauties that mediæval architecture presented to the architectural student, there were few more striking than the open-timber roofs which adorned so many of our churches and halls, and testified to the constructive skill and artistic feeling displayed by the carpenters of that age. The effect of these roofs with their bold receding arches, massive, richly-moulded and carved timbers, spandrils fitted with intricate tracery, profusely ornamented cornices and exquisitely-carved bosses, should rivet the attention of every spectator. When they added to this the blaze of rich colouring, of which most of the roofs showed traces, the result attained would be a degree of splendour which it was difficult to imagine in these days of more sombre treatment. Yet these roofs were hardly noticed by the average spectator. There was an absence of open-timber roofs in the early period of Gothic architecture which appeared very unaccountable at first, because one would naturally suppose that, as timber roofs of a necessity preceded stone vaulting, the most beautiful and elaborate forms of roofs would also occur prior to the magnificent examples of groined vaults in stone which still remained in all our cathedrals and many parish churches. The reason for this deviation from the usual course of events was not far to seek when we remembered the serious fires that destroyed Canterbury and other cathedrals about that time; the builders, finding that it was possible to use stone for roofing purposes, soon became so proficient in the use of that material that the mason seemed to have excluded the carpenter almost altogether, both from constructional and ornamental work.

The best examples of timber roofs occurred in our parish churches and a few old palaces and halls. They were, as a rule, somewhat acute in their pitch, but not invariably so, and the timber used was nearly always oak or chestnut. The scantlings were of stouter

proportion than those generally in present use and gave a feeling of robustness and security to the roof, as well as providing an insurance against the ravages of time which seemed to have left very little impression upon the enduring oak or chestnut. Most of the damage was the result of neglect or of the ruthless vandalism of the Reformation, and, later times, in defacing and removing the carved work, though, in this respect, the roofs, owing to their inaccessibility and the fear of consequences if the structure were meddled with, had fortunately come off lightly. But there was nothing to hinder the abundant use of that most effective weapon and safe cure in the hands of a fanatic or ignoramus—the whitewash brush!

Roofs might be best divided into five classes:—(1) Tie-beam roofs; (2) trussed-rafter (or single frame) roofs; (3) hammer-beam roofs; (4) collar-braced roofs; (5) aisle roofs. In many instances these classes became combined in one roof.

Tie-beam roofs occurred at all periods. In Norman times they were the only description of roof in use, but very few examples remained—in fact, he did not know of one. Restoration had swept them all away. In Old Shoreham Church was what might be a portion of a late Norman roof of the tie-beam type; this tie-beam had the characteristic billet moulding of the square form. It might be that the rest of this original roof was in existence, but at present the plaster hid it if it was there.

The "trussed-rafter" form of roof was probably chosen for the purposes of gaining head-room, or because of the difficulty in placing a wooden roof over a stone vault. Its superiority over the tie-beam, both constructionally and in point of beauty, necessarily led to its being preferred and generally used. These roofs were frequently lined and often covered with lath and plaster, although it might be doubted whether their beauty was increased by either process, certainly not by the latter. The form of the arch in this roof was often perfected by the addition of braces, curved or straight, to the underside of the rafters, and the roof was generally formed into panels by ribs running horizontally with carved bosses at the intersection. The roof at Minster Lovell (Oxon) showed this treatment with straight braces admirably, because the open and panelled portions of the roof were side by side. The most striking class of roofs was those constructed with hammer-beams. The origin of these roofs was often supposed to be that of the tie-beam which had been cut off, merely leaving the ends supported by braces; but, perhaps, the more likely theory was that derived from the mode of securing the feet of trussed-rafters. The collar-beam was retained in some cases, but not in others; but, instead of cross-timbers, thin curved braces were used connecting the collar, principals, and struts together, forming an arch which was not only important as binding the roof together, but greatly enhanced its beauty. Many buildings had double ranges of hammer-beams, of which there was a magnificent example at March. So far as these roofs were concerned, England stood unrivalled amongst all other countries, and whatever superiority they might claim in other respects there were few churches, he believed, in Europe which could boast of such specimens of timber roofs as were to be met with in almost every county of our land.

The other type of roof was known as "collar-braced," and was a simplification of the "hammer-beam," where sometimes the strut and collar were omitted. It was going only one step further to leave out the hammer-beam itself. It was found this could be done, and we had the collar-braced roof as the result.

Aisle roofs were generally of the lean-to order. The earliest examples were simply a continuation of the rafters of the nave, but the introduction of clearstories necessitated a distinct roof, generally of a flat pitch, in order to leave as much space as possible in the aisle wall for the windows. Aisles very rarely had gabled roofs, and then only of low pitch if clearstories existed. A very fine example was to be seen to the north aisle of Wymondham, where the spaces between the trusses were boarded under the common rafters and formed into panels with richly-cusped tracery and elaborately-carved bosses at the intersection of the moulded ribs. Another example of an aisle roof, but not gabled, was Mildenhall; in that case the bold and vigorous carving of dragons and grotesques was most remarkable. But the feature of that church was its incomparable nave roof, in which the alternating arrangement of the trusses was most happy, as the appearance of crowding, so noticeable in some of those elaborate roofs where the trusses were not far distant from each other, and everyone a repetition of its neighbour, was here entirely absent.

Colour played an important part in the decorative splendour of mediæval roofs, but the general practice was only to tint the mouldings and the carvings. These bright touches of colour did much to light up the sombre effect of the woodwork, and thus greatly enhance its charm.

Proceeding with that portion of his lecture devoted to screens, Mr. Marshall said that, although in our churches there are to be found screens of various kinds, when we spoke of screens generally our thoughts always turned to the rood-screens, and he was sure they must have derived much pleasure from visiting a church where the rood-screen still remained, and must have felt how very much they added to the sense of completeness of the internal effect of a building. But, in considering rood-screens, they must be careful to make a clear distinction between those in a cathedral or collegiate church and a parish church. In the cathedral or collegiate church the screen—almost invariably of stone—was of a much more solid construction than in the parish church. In both types of buildings it answered the purpose—one amongst several—of dividing the nave from the choir. But in the cathedral this division was, of necessity, far more marked than in the parish church, because the choir was reserved for the use of the clergy, provision for the laity being made in the nave. They might, therefore, consider the choir of a collegiate church before the Reformation as a church within a church, and thus that choir was not only cut off from the nave by the solid screen, as at Tattershall (Lincs.), but also when there were aisles to the choir they were also shut off by screens, but not generally of so solid a character as the rood-screen.

Almost all parish churches before the Reformation were provided with a chancel screen, and a rood loft placed upon it; however, the screen seemed to have been used first without the loft, because the earliest examples of screens did not seem to have carried any loft, as, for instance, the beautiful screen at Stanton Harcourt (Oxon), which must be of late XIIIth century or early XIVth century date, and is probably the earliest example of a chancel screen existing in England. It seemed impossible to say the precise period when those rood-screens were introduced. He was inclined to think about the XIIIth century, because, frequently in Norman and Transition Norman churches there was distinct evidence that the jambs of the chancel had been cut away for the fixing of the screen, and also, in some cases, for the insertion of the rood loft staircase. The fine church at Walsoken showed this very clearly. They must have noticed that the tops of most rood-screens to-day presented an unfinished appearance, which was owing to the destruction of the rood loft in accordance with the Royal Injunctions of 1564. No part of the church seemed to have been so signally devastated as the rood lofts and roods, for not only were they taken down, but, in places, all trace of the supporting beams entering the wall had been, as far as possible, removed.

It was in the reign of Edward VI. that the Royal Arms were first placed on the screens, on a beam over the nave, or on the wall above the chancel arch. At Hurst (Berks), there was a very good example of a Gothic screen across the chancel and north aisle of chancel of XVth or even late XIVth century date; the loft was taken down according to order, and in the place of the rood-screen were now the Royal Arms of the XVIIth century, with characteristic strapwork ornamentation on either side.

The lecture was illustrated by lantern photographs, and, at the conclusion, a vote of thanks to Mr. Marshall, proposed by the Dean of Chichester, was unanimously carried.

COMPLIMENTARY DINNER TO PROFESSOR ADAMS.

A COMPLIMENTARY dinner was given on Tuesday in the Holborn Restaurant, W.C., to Professor Henry Adams, M.Inst.C.E., M.I.M.E., F.S.I., F.R.San.Inst., etc., by students who had worked under him at the City of London College, where he was Professor of Engineering for thirty-five years. The chair was occupied by Mr. J. L. Crouch, and the company included Messrs. H. C. Adams, A. Brackett, H. C. Chevalier, O. C. Hills, Vernon Inkpen, G. C. Lambert, E. Prebble, and others.

After the loyal toast, the Chairman said he would give them the toast of their dear old friend, Professor Henry Adams, and in doing so he would say a few words as to the origin of the dinner that evening. In the autumn of 1904 Professor Adams severed his connexion with the City of London College, with which he had been associated with such distinction and to the advantage of so many young engineers and surveyors for so many years. More than one of his old pupils thought that something should be done to commemorate his retirement, and when a movement was made in that direction letters were received from all parts of the country and all parts of the world expressing the wish of the writers to take some part in the movement, if only the writing of a name on an address or in an album. Many letters were received from those who wished to be allowed to subscribe to some testimonial, but Professor Adams was opposed to that; he was always ready to do something for his students, and little for himself. What they decided to do was to present Professor Adams with an album containing signatures of his students, and to present it at a little complimentary dinner. Their recollections of Professor Adams were of the pleasantest. His kindness had been extended to all of them, and they appreciated it fully. Professor Adams had had many pupils who now occupy important official positions, and those members of his college class who survived would remember him to the end with the greatest affection and gratitude for the example and character he set one and all.

The toast was received with musical honours, after which Mr. A. Brackett presented Professor Adams with the album, a gold watch-chain, and a mementor of the evening for Mrs. Adams. In making the presentation, Mr. Brackett asked why that should be the last time the students of Professor Adams met. He hoped there would be future meetings.

Professor Adams, in thanking those who had in any way taken part in the proceedings, said he knew, of course, that his connexion with the college would terminate, but he never anticipated such an ending as this, and really he would have preferred, had the circumstances permitted it, a scholarship at the college to have ended that connexion. The good fellowship which existed between him and his students would always exist, he hoped, and he was glad to think that so many of them had attained such good positions in life, though he must say that he only tilled the ground: the seed was there. He became a teacher by accident. In 1866 he joined the chemistry class of the City of London College, and in 1867 the drawing class, the professor of which, being in delicate health, used to send him his keys and ask him to take the class, and at the end of the session that professor retired. In 1879 the council gave him a separate class—building construction, which developed into the engineering department, and he had worked at the college ever since until 1904. He thought he could claim some success as a teacher, and perhaps that success was due to the fact that he never taught for a living—being in active practice all the time—and that he had always tried to put himself in the place of the student in his endeavour to make them grasp a subject. During his thirty-five years at the City of London College he had given over 10,000 lectures to some 4,000 students, and he had provided at his own expense 1,500 lecture diagrams and smaller diagrams. Since his separation from the college he had been appointed a chief examiner in building construction to the Board of Education. He also founded the art class at the Bow and Bromley Institute, had been lecturer on land

surveying at the Architectural Association for many years, and he had lectured elsewhere. When the Surveyors' Institution first founded their examinations, the principal prizes for some years fell to his students. His advice to his students had always been: "Never shirk responsibility; hard work never hurt anybody"; and he thanked them all for their kindness to him and for the many pleasant hours they had had together.

Other toasts were "The Chairman" and "The Press," and subsequently several gentlemen gave their testimony as to the value of Professor Adams' work and their indebtedness to him.

THE ARCHITECTURAL ASSOCIATION DISCUSSION SECTION:

HOTELS AND RESTAURANTS.

A MEETING of the Discussion Section of the Architectural Association was held at No. 18, Tufton-street, S.W., on Wednesday, the 14th inst., Mr. F. Lishman being in the chair, when

Mr. Stanley Hamp read a paper on "Modern Hotels and Restaurants," which ran briefly as follows:—

The evolution of the great grand hotel of the present day has been steadily growing through the later years of the last century in a slow but curious fashion. About the middle of the last century there were few first-class West-end hotels, and those existing were something like the present "private hotels," but with a coffee-room open to the general public. The opening of the Great Western Hotel at Paddington was a harbinger of the coming change, and with the advent of Northumberland-avenue came the reign of the "monster" hotel. The Langham and the Gordon Hotels were others of this type and date. The location of a hotel is all-important; whether destined to be a commercial hotel or a "hotel de luxe," it must have the best and most suitable position, according to the *clientèle* for which it is intended to cater. The building itself should present a pleasing exterior, the usual tawdry and showy character being avoided, and the building designed simply and architecturally.

The usual accommodation of the modern hotel may be stated as follows:—On the ground floor a lounge or winter garden; dining-room and coffee-room, with service adjoining; reading and writing-room, small drawing-room; smoking and billiard-room, with bar attached; ball-room, with reception-room attached; office and manager; gentlemen's lavatory, and ladies' retiring and toilet rooms. Private dining-rooms are often needed, and in the provinces a large hall for banquets and meetings, with separate service and kitchen arrangements. In commercial hotels a sample-room is needed, with an office, lift, and separate entrance. A café, as at the Savoy, is sometimes added; in Eastern hotels a bazaar, and there should be verandah lounges on each floor. The upper floors are usually devoted to bedrooms, bath-rooms, water-closets, and service-rooms, the latter fitted with sinks, etc., and adjoining the service lifts. In the basement should be the kitchen and offices, stores, wine-cellars, etc. The office should be near the main entrance, as also porters'-room and perhaps a cigar counter. Two main entrances are needed—one to the lounge, the other so arranged that visitors on arrival need not cross the lounge to gain access to their rooms; near this entrance should be both the passenger and luggage lifts. The dining-room, especially in large towns, should have an orchestra, and a floor for dancing where no separate ballroom is provided. Certain of the rooms on the upper floors should be in suites. Doors between rooms should be removable and double, and sash windows made reversible for cleaning. Heating coils are needed in principal rooms and corridors; in the latter also hydrants and fire-alarms. The "lounge" is quite a modern introduction in England, and among the first examples was that at the Burlington Hotel at Boscombe, by Mr. T. Collcutt. It forms a popular place for afternoon tea, as well as for coffee and cigar after dinner, and undoubtedly increases the amenities of hotel life. Another feature of modern hotels is the frequent provision of Turkish and medical baths. The telephone has now become such a recognised feature that we find it even in the private rooms of hotels, especially in America. The lifts must be arranged near the entrance-hall and office. The shutters to the shafts should be fitted with electric contacts, so that the car cannot run while any door remains open. A furniture or luggage box at bottom can be provided. Letter-shutes, with openings to all floors, may be arranged to communicate with ground floor. Electric lighting is now in use in the majority of large hotels, many of these having their own generating plant. When power and lighting are needed on a large scale, it is usually economical to adopt the latter plan. The system of fire-alarm preferable of adoption is that giving notice to the staff only. Frequent fire drills create a ready and efficient staff, and such hotels as the Grand, Metropole, or Savoy may be regarded as practically safe. The position of that important department, the kitchen, used to be a moot point. With modern ventilating appliances the old objections to the basement have vanished, and it is now recognised as the most convenient place. The stores and larders are arranged along the sides of the kitchen, and receive the goods after they have been checked by the clerk. The kitchen staff may be practically divided into five working sections. The first embraces roast, soup, and game; then come entrée, vegetables, fish; and, lastly, pastry and bread. This latter is often a separate department. The ice department usually follows the pastry and confectionery, but should be away from the general kitchen traffic. The plate-cleaning, knives, and general scullery should be near service and kitchen, and near the latter also the pot scouring and cleaning scullery. The vegetable kitchen has its own scullery and store in connexion, and following these the fish larder and store. The chef's room is near kitchen and stores. In addition, there should be larders, stores, staff-room and lavatories, and wine-cellars. The service-room on the ground floor, if there is only one, should serve coffee-room, dining-room, and restaurant. Kitchen service lifts, wine lifts, and luggage lifts are all required, the latter running to all floors. The linen-store and mending-room are heated by artificial means.

Mr. Hamp then described in some detail a notable New York hotel, the Manhattan, in Forty-second-street, a fourteen-story building, notable for its admirable lighting. Returning to general planning, he advocated the provision of a Masonic temple. Grill-rooms, often in the basement, and a wine bar near entrance are necessary features, and gentlemen's lavatory and ladies' toilet-rooms, well screened, are essential.

Mr. A. H. Belcher, in opening the discussion, expressed his preference for corridors showing clearly from end to end, as being easy for visitors to follow. He referred to the position of kitchens at the Great Eastern Railway Hotel, these having formerly been on the top floor. Now that ventilation difficulties had been overcome, he regarded the basement as the best position. Provision must now be made for cycles and motors.

Mr. A. Horsnell seconded the vote of thanks.

Mr. W. Woodward made some interesting references to the new Piccadilly Hotel, especially pointing out the very thick retaining walls needed in Piccadilly-place. Like Mr. Belcher, he favoured long corridors and basement kitchens. He instanced experimental fire-alarms in various hotels, giving an average of three minutes between the call being given and the hose being ready for use on the top floors.

Mr. A. T. Bolton singled out the Hôtel Angleterre at Athens for special praise for its very wide corridors, useful as promenades. Great economy could be effected by a private water supply from a bore well. Service-rooms should be one-third or one-fourth the size of dining-room.

Other speakers mentioned the gain of having the lounge surrounded by galleries entered from the corridors, the economy of using marble skirtings in corridors, and the need of careful provision for the furnace shaft.

The Chairman said that we had still one good example of the "galleried" inn left to us—the George, in Southwark.

Mr. Runtz, the Special Visitor, began by tracing the relation between improved communication and the rise of hotels. The railway brought us the terminus hotel; probably the motor meant an equally great change to the country hotels, and here the old posting yard was capable of ready adaptation to garage purposes. Supplementary kitchens are wanted for banqueting-rooms and service of breakfasts to the bedrooms. There should be but one trades entrance, with clerk in full control. The "lounge" orchestra can be placed in the mezzanine. He favoured the provision of Turkish baths if compactly planned, and considered all bathrooms should be decorated brightly and look cosy, and be fitted with hot towel-rails. "Prince's" kitchen he singled out as a fine example of good arrangement. Turning to detail and finishing, he welcomed the return of "homeliness" in treatment, and especially praised the new Savoy Hotel for its fine detail and simple colouring.

Mr. Hamp briefly replied, and the meeting terminated.

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THIS design, sent in competition for the Soane Medallion, gained its author, Mr. Robert Atkinson, of Nottingham, what may be called the second prize in the competition, viz.: a certificate of Honourable Mention and ten guineas. It is certainly, we think, the second best of those submitted, and in one or two points, as we noticed in our review of the students' drawings, it realises Bacon's directions as to plan more precisely than the winning design. The exterior is hardly sufficiently domestic in character for a dwelling-house even on a large scale. That it does not represent anything that could have been built in Bacon's time, did not, however, we suppose, in any way disqualify it, as no special requirement was made in the instructions, in so many words, that the design should represent the architecture of the period; it was perhaps a defect in the drawing up of the instructions that this point was not precisely defined. As the matter stood, it was, as far as the wording was concerned, open to the competitors either to represent what Bacon would have had built in his day, or to design a modern mansion on the basis of his requirements. Mr. Atkinson has adopted the latter interpretation. He writes:—

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The idea of passing two or three rooms to get to the innermost does not commend itself, and to build a house in this manner would serve no useful purpose.

Having decided on a modern house and the elevations in a modern spirit, the idea of getting the whole of the building on a good basement occurred to me, thus giving ample room for kitchens, etc.

The scheming of the various forecourts, concealed galleries, offices, and lay-out of gardens was not less difficult to deal with."

ST. LEONARD'S CHURCH, WALTON-LE-DALE, LANCS.

THE nave and transepts of this church have just been re-erected. The tower and chancel date from the XVth century. The old nave was a good specimen of the Church-warden period, with galleries boxing it in, and was in a ruinous state.

The new church had to be made almost exactly the same on plan, the graves being close on all sides. Owing to this and to the desire to avoid internal columns the span of the roof is 42 ft.

The walls are, externally, of local Houghton stone, and internally, of beautifully-marked Runcorn stone. The roof, seating, pulpit, etc., are of oak. The roof covering is green Westmorland slates. There are three old stained-glass windows refixed. The total cost of the church is nearly £10,000; the contractors being Messrs Hatch & Sons, of Lancaster, the glazing and adapting of old windows by Mr. H. G. Murray, of Caroline-street, Eaton-square. The architect was the late Mr. John P. Seddon, this being the last work carried out by him.

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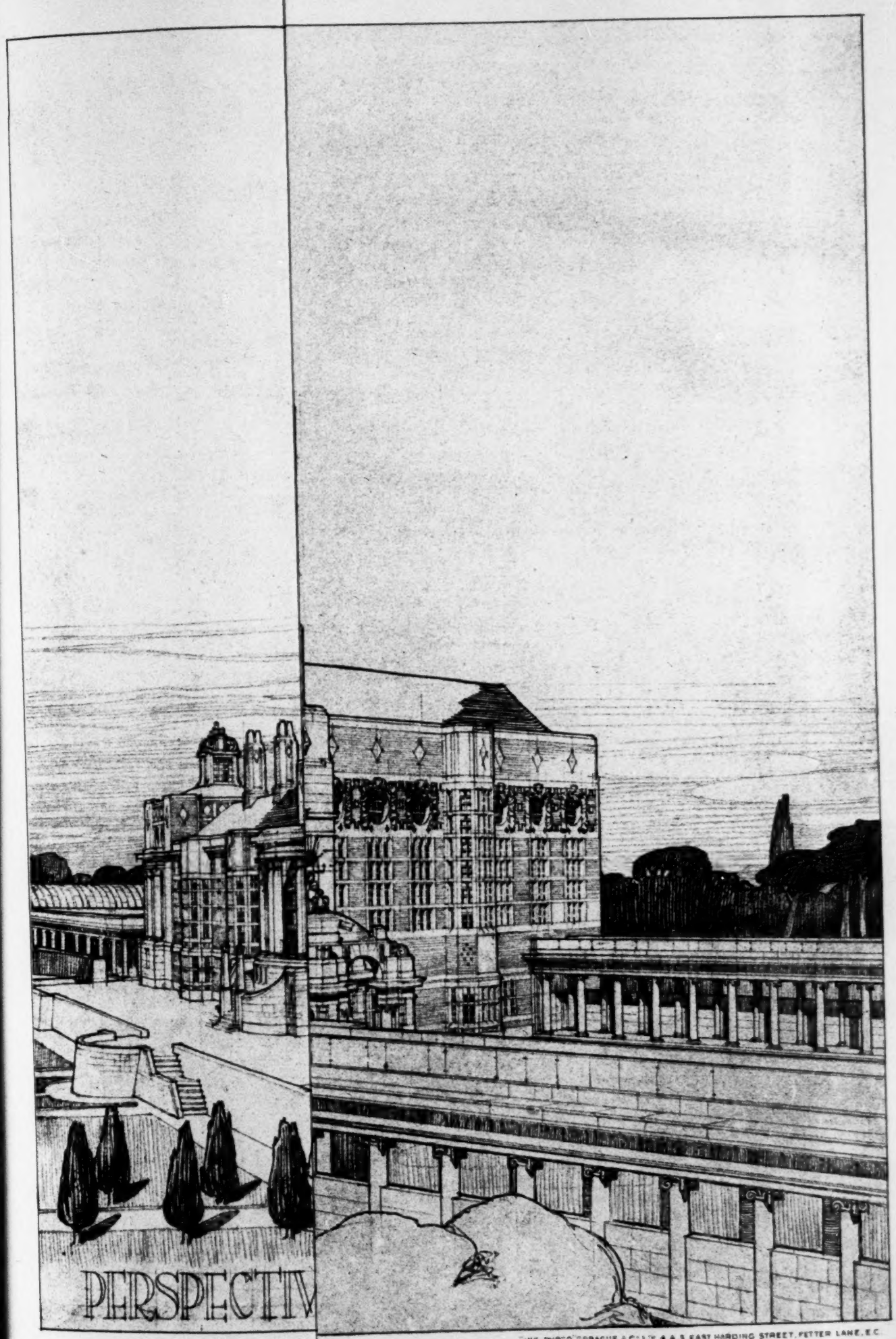

INK-PHOTO SPRAGUE & C° LT° 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

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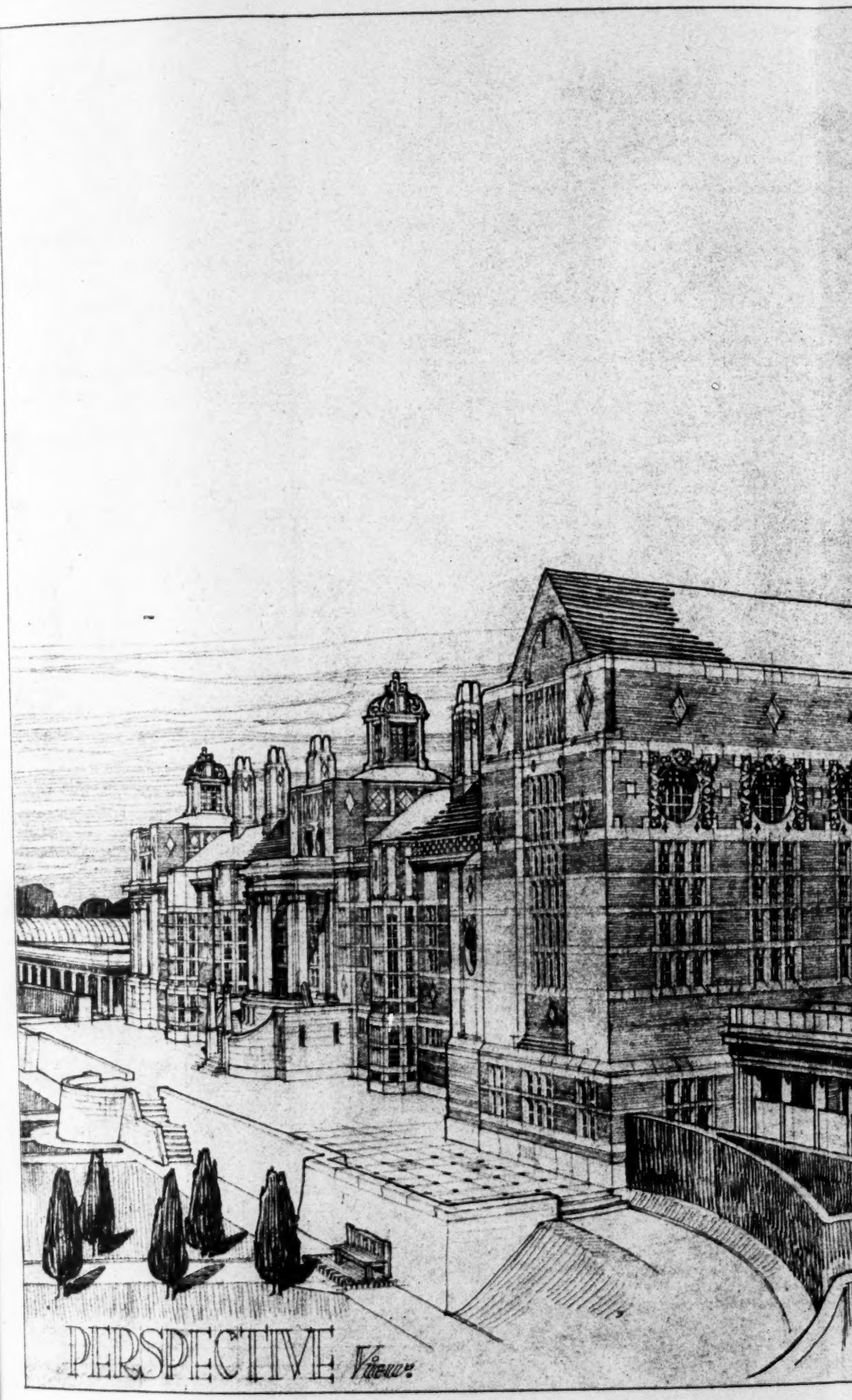

Honourable Mention, Soane Medallion Competition, 1906.

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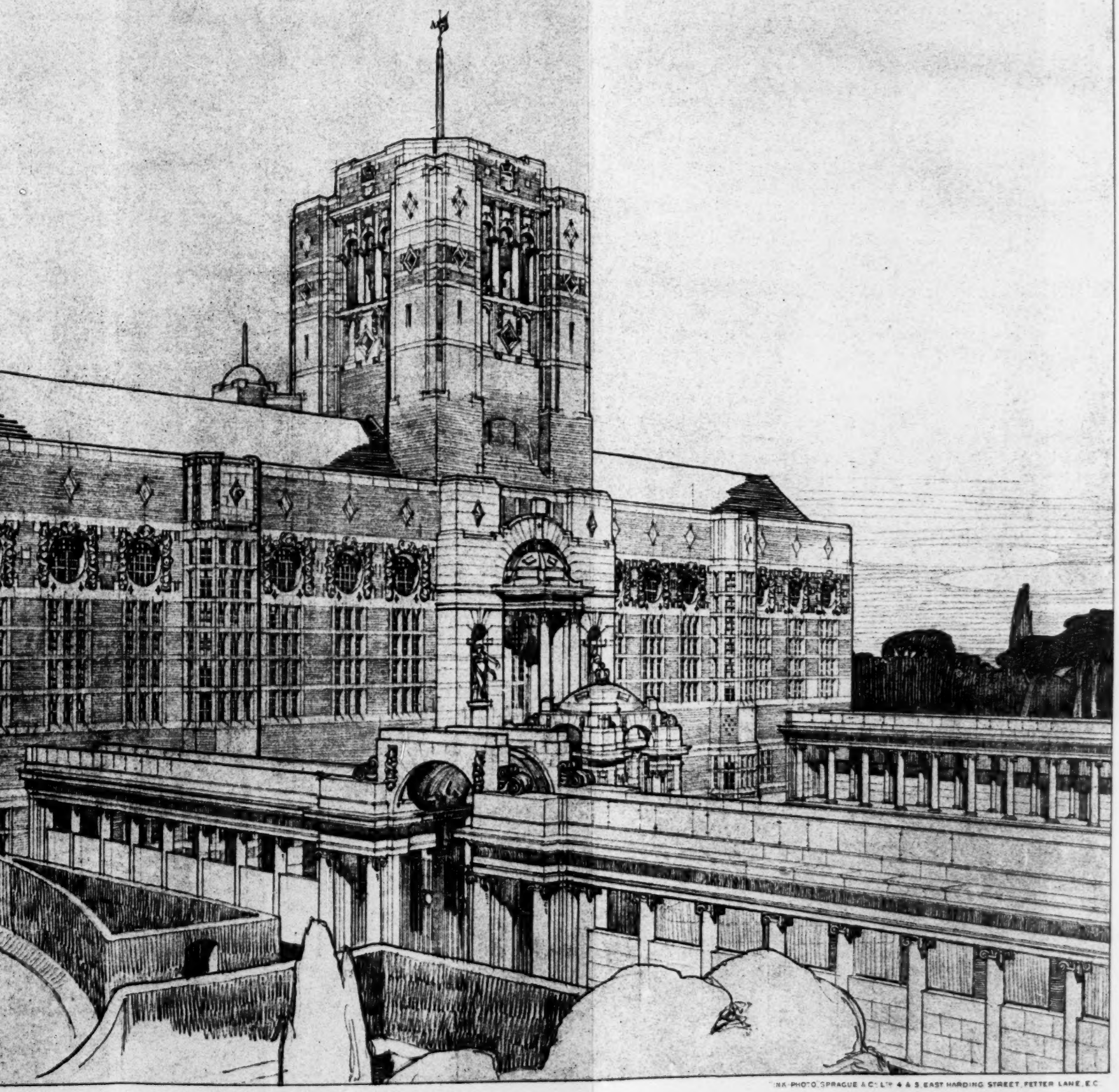

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BACON'S IDEAL PALACE.—Design by Mr. Robert Atkinson.

A Realization of the
IDEAL MANSION
Described in BACON'S
Essay "OF BUILDING."

ELEVATION to
ENTRANCE
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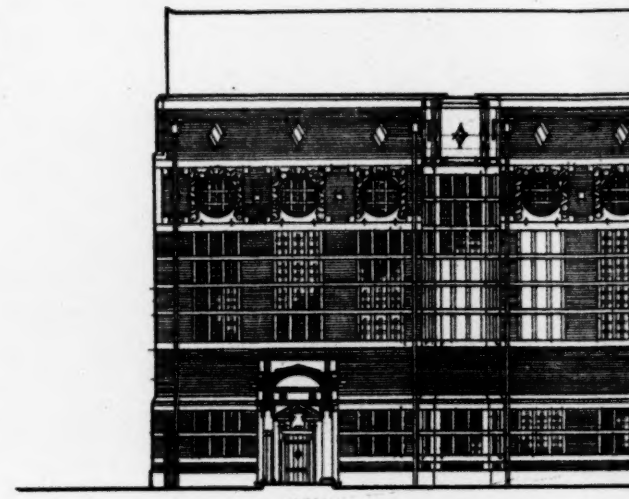

Terrace — Entrance Court

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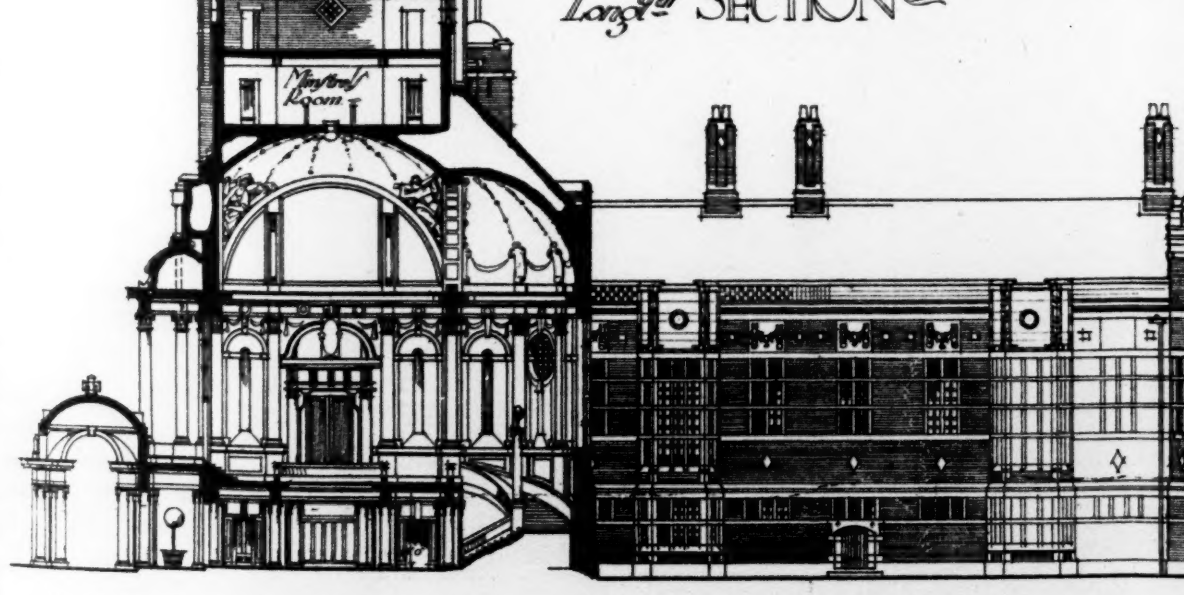
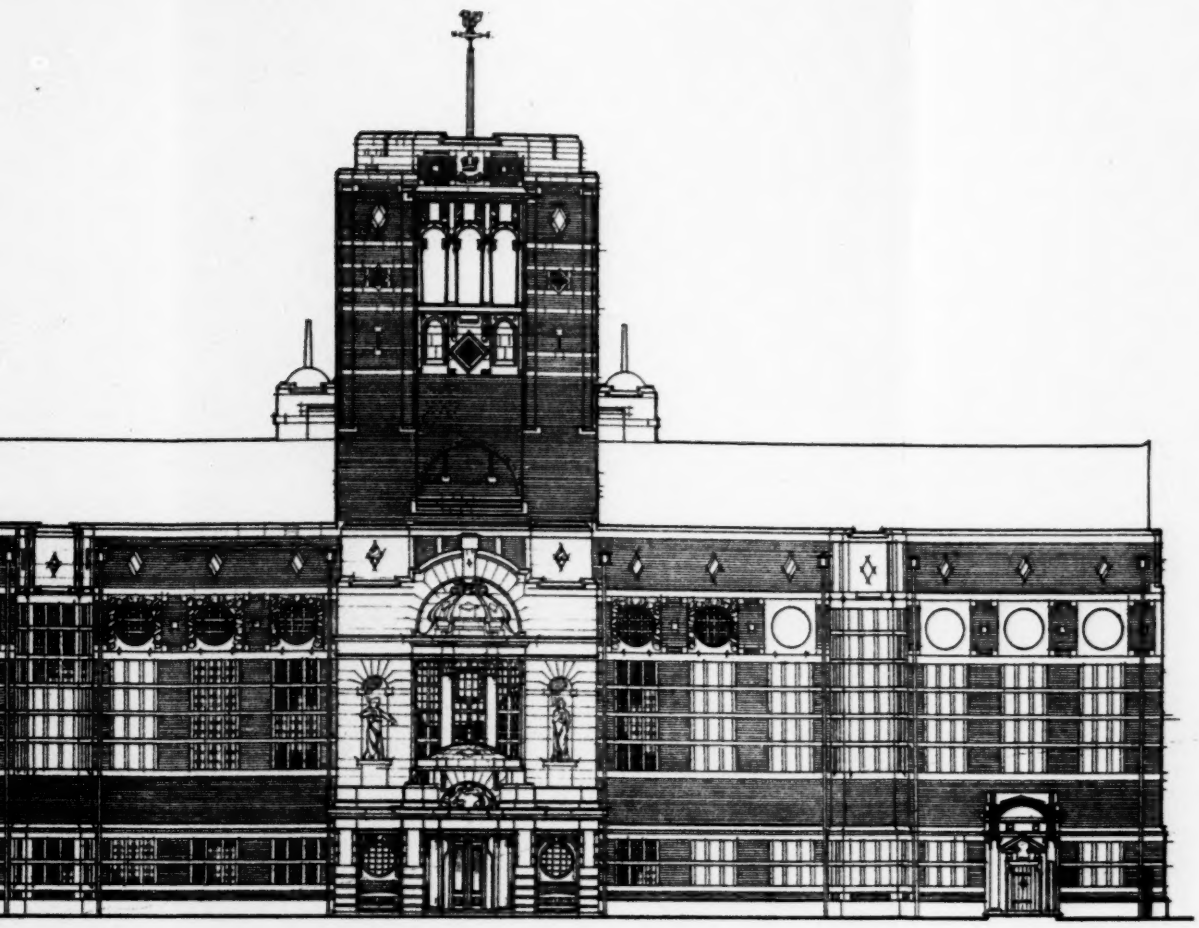
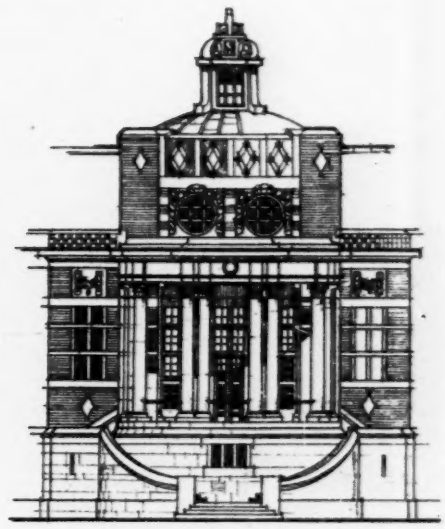


Porte Cochere-Porch-Entrance Hall-Grand Staircase — Inner Court —



Entrance Court — Porte Cochere — Terrace



Garden Entrance

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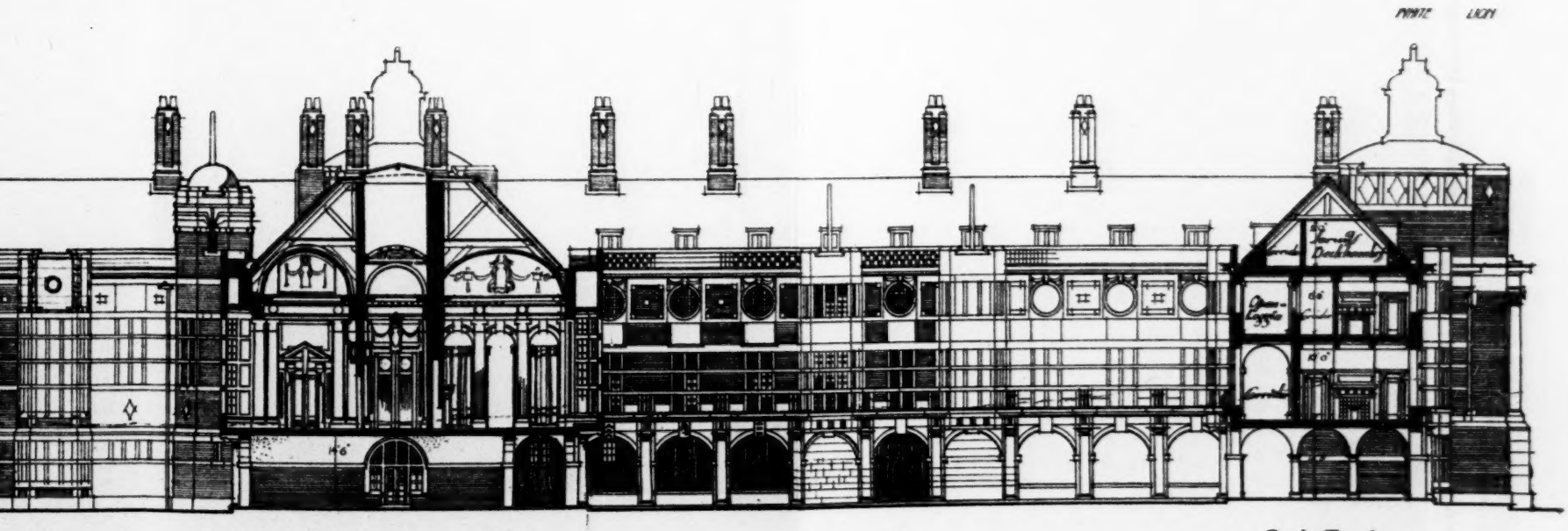

Library — Picture Gallerie — Withdrawing Room — Fountain Court — Bed Chambers

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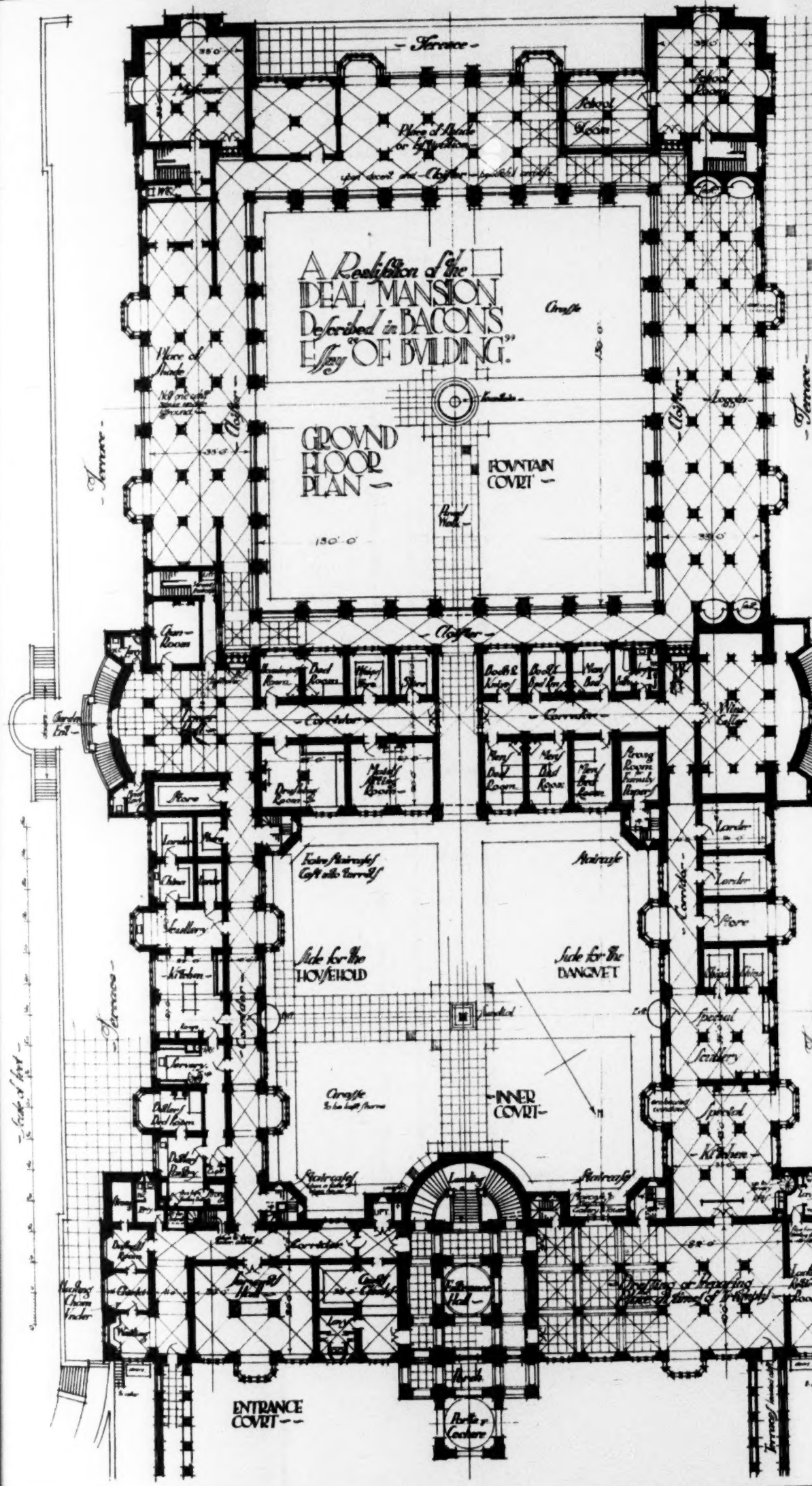
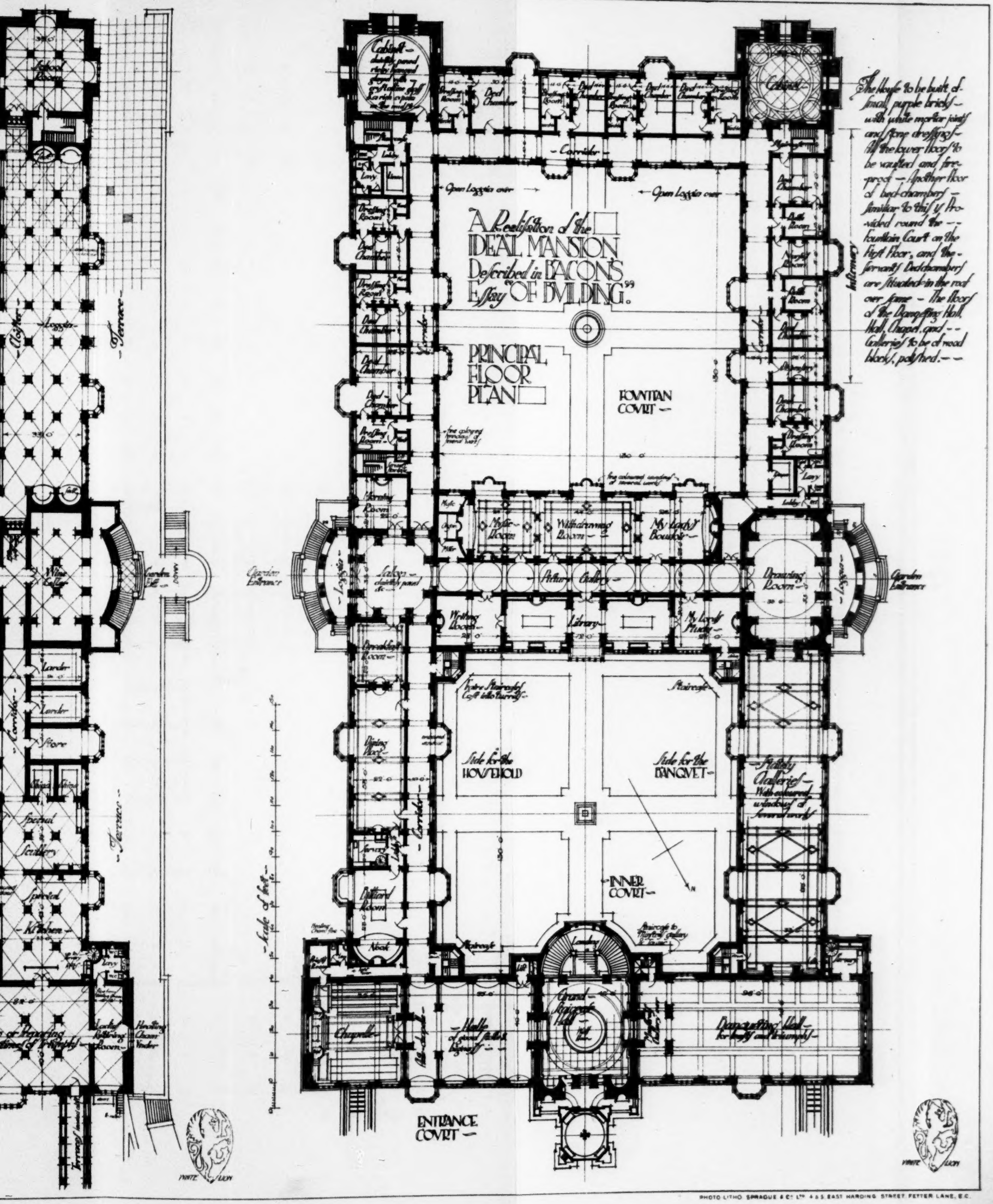
BACON'S IDEAL PALACE.—Design by Mr. Robert Atkinson.



Honourable Mention. Soane Medallion Competition, 1906.



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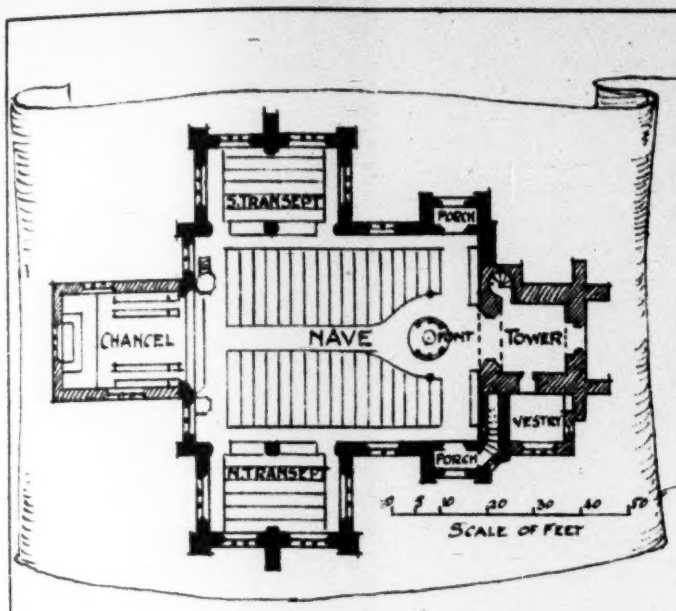
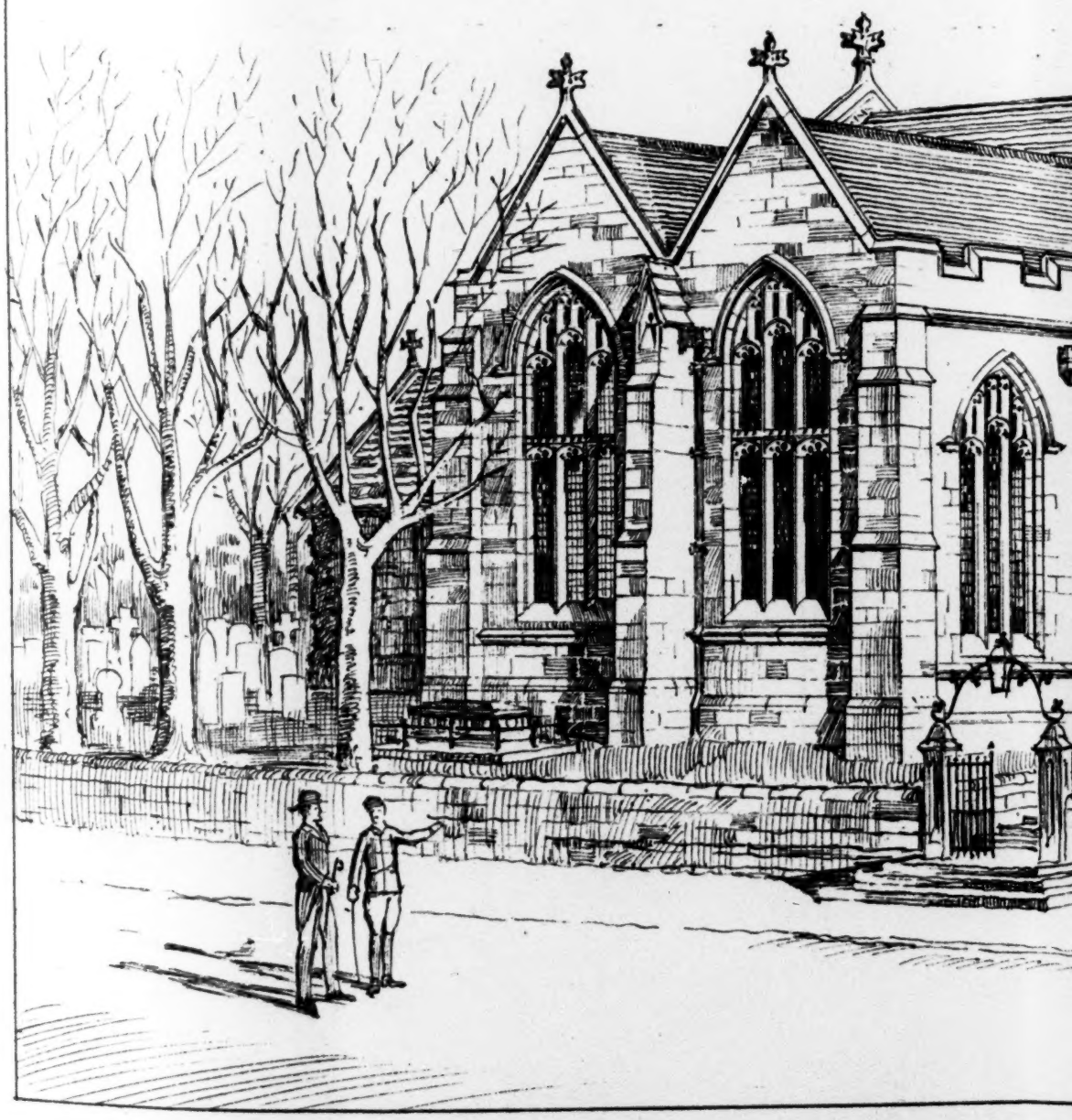


St Leonard's Church Walton-le-Dale Lancs



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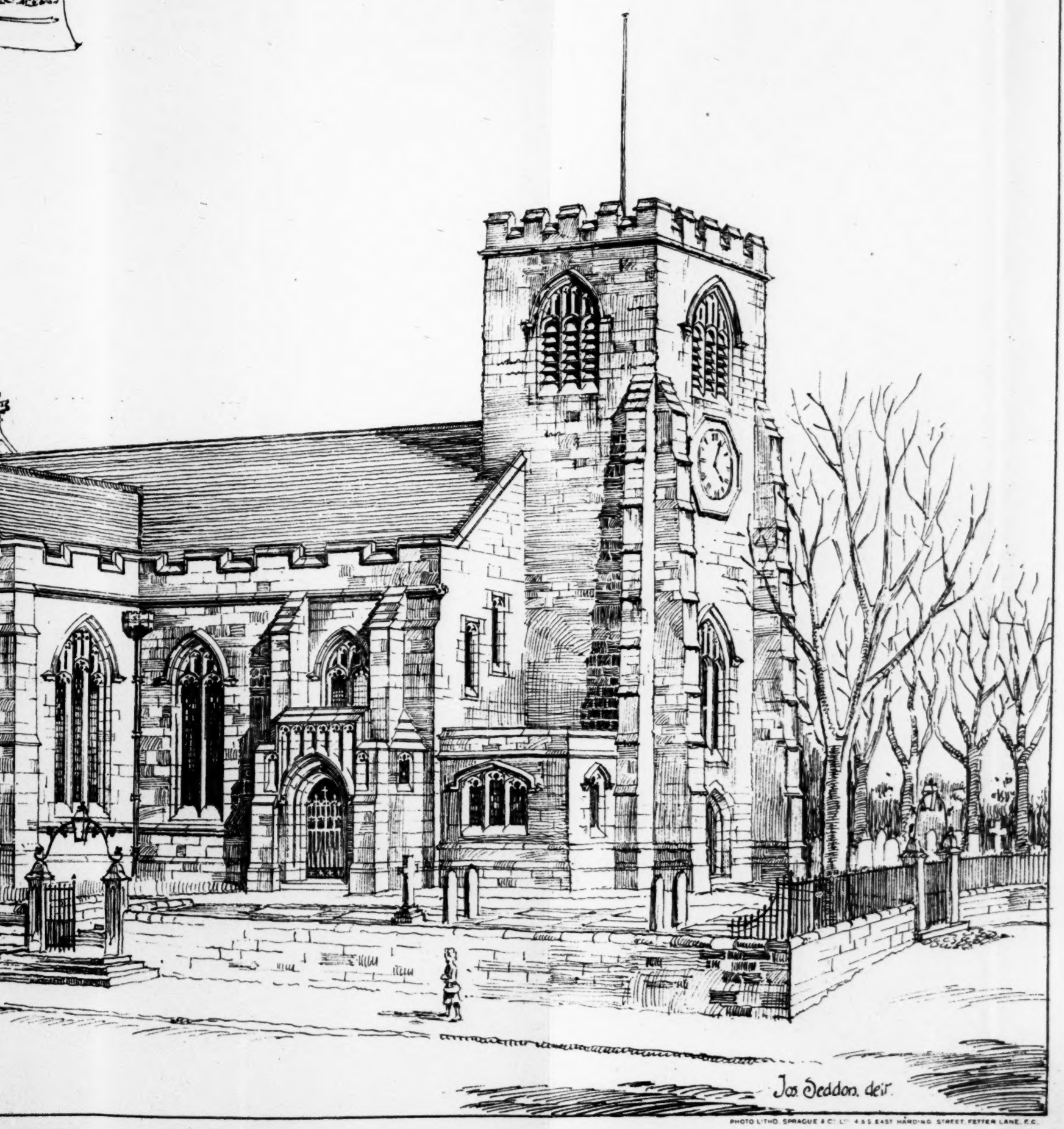

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HURCH, WALTON-LE-DALE.—THE LATE J. P. SEDDON, F.R.I.B.A., ARCHITECT.

Fifty Years Ago.

FROM THE *Builder* OF FEBRUARY 23, 1856.

CANNING TOWN.

IN the view of Canning Town, as it appears from near to the iron bridge, the green level is shown extending over a great extent. Along the margin of this flat land, in every direction, houses, shops, public-houses, and churches are now to be seen skirting the level, and gaining every week further and further upon the space, which is chiefly several feet below the high-water mark of the Thames. The new town, which already consists of several long streets, will, in the course of a few years, spread out and meet the approaching houses, and all this level will be planted with dwellings and inhabited by many thousands of people. The artificial bank of Bow creek and the embankment of the Thames are all that prevent the houses here from being flooded every high tide. To provide for the effectual drainage of this district by the ordinary means is impossible. The houses here have been erected without the means of either carrying off the refuse or properly getting rid of the damp. In course of time the *débris* of these and other houses will raise the level; but, in the meantime, it is sad to think of the sacrifice of human life which must take place without prompt measures. With some difficulty we managed to reach the place on foot from the turnpike road, and found the condition of the streets miserable—many of them, although the day was tolerably fine, were almost impassable, and vehicles sank almost up to the axletrees in the mud. In many parts were great pools of stagnant water. Several of the inhabitants said that, if we had come a few days before, during the rain, it would not have been an easy matter to get along the streets at all. Most persons complain already of the drainage. We understand that it is proposed to take the sewerage to a certain depth, and pump it into the Thames by steam power. If something is not done, in two or three years' time the ground will be poisoned by cesspools, water will stand on the surface, and evils of a serious nature will follow.

In a score of years or less, Canning Town will be an important place, with its churches, omnibus and cab stations, and its masses of rich and poor. Let us hope for the introduction of measures proportionate to the extent of the future requirements. Flesh and blood are precious materials.

THE LONDON MASTER BUILDERS' ASSOCIATION.

THE annual dinner of the London Master Builders' Association was held on Thursday last week at the Whitehall Rooms, Hôtel Metropole, Charing Cross, Mr. Frederick Higgs, President, in the chair. There were also present:—Messrs. W. E. Riley, Superintending Architect London County Council; G. L. Gomme, Clerk to the London County Council; Walter Lawrence, President of the Quantity Surveyors' Association; G. Macfarlane, President National Federation of Building Trade Employers; W. F. Wallis, President Southern Counties' Federation; Alex. Ritchie, J.P., C.C., A. C. Blomfield, J. M. Beveridge, A. C. Bulmer Booth, E. J. Brown, H. W. Burrows, J. Carmichael, J. W. Chessum, G. Corderoy, W. Clarkson, J.P., R. A. Denell, S. B. Depree, F. L. Dove, J. E. Dormer, W. Downs, W. Farthing, E. Gabriel, T. Gregory, G. Bird Godson, R. C. Gleed, W. Hunt, H. H. Holliday, G. Hubbard, T. Holloway, H. F. Higgs, E. B. l'Anson, E. Keynes-Purchase, W. Lawrance, J. W. Lorden, F. M. May, D. W. McInnes, F. G. Minter, L. J. Maton, W. H. Nightingale, H. Northcroft, A. E. Parker, C. W. Reeves, F. G. Rice, R. M. Roe, R. Sawyer, W. Shepherd, H. J. Treadwell, A. W. Turnbull, C. Wall, Howell J. Williams, L.C.C., F. E. Williams, W. Woodward, T. Costigan, Secretary, and others.

The loyal toasts having been honoured, Mr. J. W. Lorden, Vice-President, proposed the toast of "Municipal Bodies." In referring to the London County Council, he said that that body did an enormous amount of work, and, speaking generally, they did it in an excellent way, and the same remark applied to other municipal bodies. Builders did not mind the Building Act, or amendments of the Act, if it was applied and carried out in the same way. As to the Works Committee of the London County Council, certain builders had regarded that as a competitor, but was it? He did not think it was, for the London County Council could not do the work as cheaply as the contractor, and they could not do it better. The Master Builders' Association included within its ranks all the principal builders and contractors of London, and it should include all kinds of builders except the jerry builder, and the jerry-builder they declined to have.

Mr. G. L. Gomme, in response, said he could assure them that, so far as the Association was formed for the purpose of doing good building, no one would do other than properly recognise them. There were beautiful old buildings existing in London the names of the builders of which they did not know, but they did know the names of the builders who were rebuilding London, and when they saw some of the work which was being carried out to-day they could not deny that the builder and his workmen were worthy of the best traditions of their class. As to the Works Department, he might remind them that the London County Council did occasionally apply to the master builders when they had a difficult or delicate job, such as the restoration of No. 17, Fleet-street; and the master builder, Mr. Downs, who carried out that work under Mr. Riley was sympathetic with the work, which he understood and carried out thoroughly. Some beautiful buildings were being erected in London, which were a joy to see; and he should like to suggest that if the master builders of London would say that they would never take in hand a piece of work which was bad, even at the prospect of a high price, some time or other we should find London, so far as its buildings were concerned, in the same position as that it holds in the country's history. He hoped that in the rebuilding of London there would be swept away some of those jerry-built houses which were a disgrace to any city, and that they would be replaced by buildings like some of those they had about them.

Mr. W. F. Wallis then proposed "The London Master Builders' Association," which, he said, was to them in the south of England an object of envy and admiration, seeing how strong it was, how up-to-date, and how much in touch with its work. Taking into consideration the great progress which the Association had made during the past year, it need not now fear comparison with any similar association in the kingdom. The Association was over thirty years old, it was doing a good work, and it had been loyal to its motto of "Defence, not defiance." There had been peaceful times for the Association in recent years, but they did not know what the future held for them. The Labour Party in the House of Commons was likely to be an effective body for working out the aims and objects of the working class, and no one knew what line it was likely to take. Of the President, it could be said that he had worthily followed in the footsteps of those who preceded him. There had been as many as seventy committee meetings of the Association during the year, and these the President had attended, as well as spending a good many hours in the office with their excellent secretary, Mr. Costigan, and the President was to be congratulated on the excellent results of his year's work.

The toast was drunk with musical honours.

The President, in response, said that the objects of the Association had been fully set forth in a little pamphlet which had been published by the Association. It was one of the chief branches of the National Federation of Master Builders, which was the organisation of the building trade throughout the whole of Great Britain and Ireland—not such a perfect organisation as they hoped to see it, but still one which covered the country and which in the north, was tolerably complete. London occupied an important position in the Federation, and it derived benefits from the connexion—or would do so in the event of difficulties with workmen, when the Federation would be called on to assist. The Association was the business representative of the trade. It was recognised by Government and the municipalities and they frequently came to the Association for information, etc., as to custom and other matters relating to the trade. Shortly, the Association was the employers' trade union. Workmen had taught them a lesson—*i.e.*, that unity is strength. The Association made rules to govern the operations of the trade; it defended trade interests wherever assailed, and it settled disputes with workpeople. There had been many difficulties which, in the past, would have given rise to strikes, but which had been settled by amicable conference. The Association gave advice and assistance to members on trade matters of all kinds—legal advice in law cases, technical usage, etc.—and that was of great help to builders, and in cases of vital interest affecting the trade generally they would have no hesitation in materially assisting the member of the Association interested. The Association fostered friendship and good feeling between members, and that was a good thing. They had also revised and unified the trade rules during the year, and they had found the leaders of most of the trades very reasonable. The President then explained what had been arranged with the various trades, and the nature of the rules and regulations in force.* Proceeding, he said that most disputes had been settled, and something had been done to oppose the harassing legislation proposed by certain public bodies. The Association had had to spend a lot of money in opposing a certain Bill in Parliament, and, in his opinion, the procedure at present necessary to oppose Bills involved a scandalous waste of public money, and ought to be revised. Their friend, Mr. Shepherd, did yeoman service, but they ought not to have been put to the trouble and expense they had to face in order to oppose the Bill. The Association expected to get new offices, and he hoped that in those offices there would be accommodation and opportunities for members to make appointments to meet clients, and to use the board-room for trade disputes or arbitration. It had been a pleasure to him to act as President during the past year, and he greatly appreciated the support he had had from the members of Council and their friend the secretary, Mr. Costigan, as well as from his partner and subordinates, who had allowed him to devote so much time to the Association business.

Mr. F. L. Dove, Treasurer of the Association, then proposed "The National Federation of Building Trade Employers." The Federation supplied a long-felt want. Many local builders' associations had done sterling work in trade disputes, but it was found that the workmen were better organised all over the country, and they fought the employers in detail, first in one town and then in another. As a result, the employers organised the whole trade throughout the country, though not without much difficulty. The Federation was now in a strong position, and each year the prospect of strikes and lock-outs grew less and less, as both men and masters were well organised, and both had money at their disposal.

Mr. G. Macfarlane, President of the National Federation, responded to the toast, and said that it had been found that, single-handed, no local builders' association could do combat with the strong trades unions, and the object of the Federation was to stop the hammering of town after town that had previously taken place, and if they were strong enough the trades unions would hesitate to attack them. They were faced by a strong labour movement which might have a serious effect on the building industry, and some of the new members of Parliament would endeavour to get a change made in the laws of the country which would affect the trade. They might take it from him that the Taff Vale decision would be overruled, but, if it was, he hoped that something fair and just would be put in its place. As to conciliation, law suits were never satisfactory to either party, and generally the winner was a loser. The other day a woman had awarded her 200*l.* for the loss of her husband, and when all the expenses and costs were paid she received 20*l.* Diplomacy was far better than warfare, and the way the Association in London managed in the matter of conciliation, and the way the President had managed the work, was very creditable. As to the Workmen's Compensation Act, he did

* See our issue for October 21, p. 427

not know what their experience in London was, but in the north the Act had proved to be the most prolific Act for litigation of any he knew, and it had been a gold mine to lawyers. The success of the Federation depended upon the associations, and he hoped they would all pull together in one direction. They should not let London or provincial jealousy spring up amongst them; unity was what they wanted. The Federation was doing its best to organise the various associations throughout the country, but there were numbers of large employers whom they could not draw into the fold, and it was a shame that these men should not help them, seeing that they benefited from the work of the Federation.

Mr. Howell J. Williams, L.C.C., then proposed "The Architects and Surveyors." The architectural profession was one of the most noble in the country. A good deal had been heard lately about Imperialists, but who were really the great empire-builders but the architects? What would London and other great cities be but for architects?—and yet how miserable were their rewards! In other professions, particularly the legal profession, there were great rewards for its followers, but these were wanting in the architectural profession because architects had their heart and soul in their work and had not taken that interest in the legislation of the Government to make it possible to secure those adequate rewards for their own profession. He advised architects to seek more seats in the House of Commons. He did not think there was any profession more harassed in this country at the present time that the architectural profession. They had to face Building Acts here, amendments, by-laws, sub-by-laws there, and such bodies as borough councils, guardians, etc., everywhere. As to the Building Act, he had repeatedly urged that what was wanted was not an amendment of the Act, but a codification of the Acts in such a form that one could easily know what was desired. Instead of that one had to turn to an amendment which referred to an amendment, which in turn referred to a previous amendment. He believed the London County Council tried to do what was right in the interests of London, but he urged upon them to remember that the people they should go to to assist them in any piece of legislation were those who knew most about the matter. Every town had a right to control the building work which went on around it, but a great deal depended on the way the control was exercised, and upon that sweet reasonableness in administration which was so necessary and yet so often absent. He believed in the *entente* in everything, even in the building trade. As to the attempt to Americanise the building trade of London, he warned everyone to discourage that system. What we wanted was the old system brought up-to-date; the architect to create, and the builder to carry out. As to the surveyors, it was a most unhappy state of affairs when there was no quantity surveyor on a large job. Litigation was avoided where a quantity surveyor was engaged, and the quantity surveyor, though a new institution, had come to stay. As to district surveyors, he was opposed to doing anything which would destroy the position and independence of the district surveyor, whatever else might be done by the London County Council in the matter. The independent district surveyor was really essential as a buffer between the architect and builder, and the unreasonable administration of Acts of Parliament. He hoped that no architect or surveyor would be party to such an outrage upon the public as was to be seen in Fleet-street where was being erected a building, the front of which was being treated with horrid plaques of colour; to prevent such an outrage, further powers should be granted even to the London County Council. As to the visit of the London County Council to Paris, what he had noticed was that in Paris art led the way before commerce, whereas in London, unfortunately, commerce came first and art afterwards. He was afraid that London would never be what Paris is, for difficulties were in the way, but with the rising generation of architects everything was possible—even a new London County Council hall.

Mr. W. E. Riley, who responded for the architects, said that it was remarkable that, while he was constantly meeting people who told him all about the canons of architecture, and where he was wrong, and all the details about it, they never heard a man tell his lawyer where the lawyer was wrong—if he did, he would have to pay for it. Architects and builders were supposed to be in opposite camps by those who did not know. There were fourteen builders in that room with whom he had had close relations in building work, and he had never had a quarrel with any one of them. Any feeling of opposition they had could be got rid of by the exercise of a little forbearance. In nearly every instance in which he had carried out contracts he had insisted on a good arbitration clause. He disliked to see in any specification the words: "Make all clean and perfect." It was a most foolish expression, and the man who put it in did not know what he wanted. It really meant that the builder must do what he had forgotten to tell him to do. As a rule they did not sufficiently appreciate the very great necessity there was for them to try and get more sympathy in the interpretation of what they wanted done by the builder. He had never seen a good design on paper which would not be seriously impaired by bad building, and he had never seen a bad design which was so bad on paper that it would not be materially improved and given character to by sound and good building, and in that lay what he called the true art of building. As to the recent depressed state of the building trade, he hoped things would soon brighten up.

Mr. G. Corderoy briefly replied for the surveyors.

The remaining toast was "Our Guests," suitably proposed by Mr. Alex. Ritchie, J.P., C.C., and acknowledged by Mr. G. Hubbard.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Fulham Borough Council 6,000*l.* for laying out cemetery, and 15,000*l.* for street improvement; Hackney Guardians 10,000*l.* for poor law purposes; Hammersmith Borough Council 15,210*l.* for electric lighting; Wandsworth Borough Council 5,850*l.* for street improvements; Woolwich Borough Council 10,000*l.* for baths and wash-houses, and 1,580*l.* for advances under the Small Dwellings Acquisition Act, 1899.

The Works Committee.—The Works Committee submitted statements of works completed during the half-year ended September 30, 1905. In statement I. are included the accounts for thirteen works, in respect of which complete specifications and bills of quantities have been prepared. The cost of two works has exceeded the final certificate; the net balance of cost below certificated value is 27,786*l.* 9s. 4d., or over 10 per cent. Statement I. showed that the total estimated cost of the thirteen works was 265,103*l.*, and that the actual cost was 237,317*l.* Statement III. shows the results of the execution of jobbing works during part of the year 1904-5 and of the year 1905-6. The cost of works executed in the year 1904-5, and not previously reported, is 15,474*l.* 15s., and the balance of cost below schedule value is 1,500*l.* 19s., or 9 per cent. The balance of cost below schedule value in the case of the works executed in 1905-6, and now reported, is 190*l.* 6s. 3d., or 8 per cent. In their general observations the committee state that: "The total cost of the works included in the statements now presented does not represent the turnover of the department, because much of the expenditure on these works occurred previous to the half-year in question, while, on the other hand, much of the expenditure during the six months was upon works which are still unfinished. The approximate expenditure on works executed by the department during the half-year was 305,000*l.* The expenditure in the previous half-year, reported by us on August 1, 1905, was 402,300*l.*, but this figure is hardly comparable, as all indirect charges, such as those for plant depreciation and general and establishment charges, are always brought into account in the second half of the financial year. The turnover for the financial year 1905-6 will probably exceed the turnover for the previous year. The number of estimated works referred to us for execution and not yet included in the half-yearly statements of completed works submitted to the Council is fifty-three (the several sections of Aldwych and Kingsway being regarded as one work), representing an estimated expenditure of approximately 1,442,000*l.*" They recommended: "That the excess, amounting to 148*l.* 13s. 10d. and 589*l.* 14s. 11d., of actual cost over final certificate in respect of the erection of workshops at Shoreditch Technical Institute and the enlargement of Windsor-road school respectively, be approved."

In answer to a question, Mr. Torrance, chairman of the committee, said that the committee did not want to be put in competition with the contractor.

Mr. E. Collins said that had the work been put out to tender large sums of money might have been saved.

Mr. R. A. Robinson said that there were many responsible contractors who could do the work more cheaply than the Works Committee. That had been proved over and over again. The committee took its work in an exclusive way. When the Works Department was first started they were told that the work would be done 10 per cent. cheaper than if let to contractors; but not only did the committee fail to do that, but it did the work at a greater cost.

Mr. Ward controverted these statements, and said that by the present system the responsible officers would always be able to make a close estimate of the probable cost of work.

The recommendation was then carried.

Rating of Site Values.—The following recommendation of the Local Government, Records and Museums Committee was agreed to:—"That a petition be presented to the House of Commons praying that a Bill may be introduced by His Majesty's Government to provide for the separate assessment and rating of site values; that the Parliamentary Committee do prepare such petition; and that the seal of the Council be affixed to the petition when ready."

Mr. H. P. Harris said the Government programme had been announced in the King's Speech, which contained nothing about a Site Values Bill, and, as many of the subjects mentioned in that speech would not be carried into law, it was hopeless to expect that any measure would be carried which was not there mentioned. The rates would not be relieved by the Equalisation of Rates Bill, which would only redistribute the pressure, neither would a Site Values Bill reduce the burden. That burden would, however, be relieved if the Government would carry out the recommendations of the Royal Commission, and he therefore moved that the report be referred back, with an instruction to the committee to approach the Government on the lines which he had suggested.

On a division, the amendment was rejected by fifty-three votes to twenty-five. The recommendation of the committee was thereupon adopted.

Cost of Erection of Schools.—The Education Committee reported as follows:—

"We submitted on December 5, 1905, a report with reference to the preliminary plans of the schools proposed to be erected on the undermentioned sites:—

(i.) Kennington—Lawn-lane: New school for 798 children, three-story building; total estimated cost of erecting school, including furniture, possible extras, plans, supervision, etc., 20,332*l.*, equivalent to 25*l.* 9s. 6d. a place; estimated cost of building only, 18,700*l.*, equivalent to 23*l.* 8s. 7d. a place.

(ii.) Wandsworth—Fountain-road: New school for 840 children, two-story building for boys and girls, one story for infants; total estimated cost of erecting school, including furniture, possible extras, plans, supervision, etc., 21,414*l.*, equivalent to 25*l.* 9s. 1d. a place; estimated cost of building only, 19,871*l.*, equivalent to 23*l.* 13s. a place.

(iii.) Wandsworth—Franciscan-road: New school for 804 children, three one-story buildings; total estimated cost of erecting school, including furniture, possible extras, plans, supervision, etc., 19,690*l.*, equivalent to 24*l.*, 9s. 9d. a place; estimated cost of building only, 18,085*l.*, equivalent to 22*l.* 9s. 9d. a place.

(iv.) Poplar—Janet-street: School for the accommodation of sixty mentally defective children; total estimated cost of the building, 3,782*l.*

We then recommended that estimates in respect of the preparation of working drawings, etc., which had been submitted by the Finance Committee in respect of these schools should be approved. The Council, after some discussion, postponed the consideration of this recommendation, our chairman undertaking that an inquiry should be made into the cost of erecting public elementary schools with a view to ascertaining whether it would be possible

to effect any economies in the matter of school building.

We have obtained reports from the architect (Education), copies of which have been sent to the members of the Council, and which we think will be of interest to the Council. So far, however, as we have inquired, the cost of erecting schools does not appear to be excessive.

The late authority on several occasions considered as to whether it was possible to effect any reduction in the cost of building schools, the last occasion being in 1903. The question then arose upon observations made by the chairman of the Croydon School Board upon the public opening of the Portland-road school, to the effect that the cost of building (exclusive of site and furniture) had been 13*l.* 11s. a place, as against a cost of 28*l.* 10s. and 30*l.* 15s. 4d. in two London schools.

In order that a comparison might be made between two schools, where the conditions of planning, etc., were as nearly as possible identical, the Invicta-road school, Westcombe-park (Greenwich), was taken as corresponding fairly in general arrangement and size with that of the Portland-road school, Croydon. The Portland-road school, which was erected in 1902, accommodates 1,310 children, the cost of which the chairman of the Croydon School Board was reported to have stated to be 13*l.* 11s. 8d. a place. The Invicta-road school, which was built in 1898, has 965 places, and cost 20*l.* 7s. 4d. a place. The graded portion of both schools consists of a two-story building, the infants being accommodated in a separate one-story building. A comparison was made, item by item, of the various branches of the work done at these schools, and a very full examination was made of materials, quantities, and prices. The sub-committee which then reported arrived at the conclusion that the facts before them showed "that, having regard to the accommodation provided and the character of that accommodation, and the conditions under which the London School Board are required to work, the London Board have had their work done quite as cheaply at Invicta-road as the Croydon Board at their Portland-road school."

In the course of the inquiry it was ascertained that it was cheaper to build a school in two separate blocks, consisting of a two-floor building for the graded school and a one-floor building for the infants' department, than in a single block of three or four floors. This was accounted for by the fact that, although, in the case of a three-story building there is a saving in having to provide one roof only instead of two, this saving is more than counterbalanced by the additional cost of the greater thickness of brickwork required for the walls, the extra cost of the scaffolding to the upper floors, and the cost of hoisting joists and girders to a great height, etc. In planning new London County Council elementary schools, this practice is adopted wherever the site is of sufficient size for the purpose.

As regards the question of the estimated cost of the buildings referred to above, it should be pointed out that the three new schools (i.) (ii.) and (iii.) have been planned for future enlargement (the accommodation of the complete school being given below), and provision is made in the preliminary plans and estimates now under consideration for the building of halls of sufficient size for the schools when enlarged, it being impossible to enlarge the halls after they have been erected and the building planned for the specified accommodation. The cost for the Lawn-lane school also includes a provision for the erection, with the first portion of the school, of the cloakrooms, lavatories, and teachers' rooms required for the complete school; in the plans of the Fountain-road school, additional staircases for the complete school are included for boys and girls, and in the case of the infants' school, additional cloakrooms, lavatories, etc. As regards the Franciscan-road school, the cloakrooms and lavatories for the complete school are included in the plans and estimates. This provision for future requirements, while it adds to the initial cost, is really a considerable saving to the Council, as when the additional classrooms are erected the cost is about 7*l.* 10s. a place. The architect's (Education) estimates for the cost of buildings only in each case, calculated on the accommodation of the complete school, are as follows:—

Name of School.	Area of Site. Square feet.	Accommodation of Completed School.	Estimated Cost of School Building Only.	Estimated Cost a Place.	Total Estimated Cost including Furniture, Possible Extras, etc.	Total Estimated Cost a Place.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			£ s. d.	£ s. d.	£ s. d.	£ s. d.
(i.) Lawn-lane	32,380	1,111	16 502 0 0	14 17 0	23,099 0 0	20 15 9
(ii.) Fountain-road	86,900	1,140	17,205 0 0	15 1 11	27,347 0 0	23 19 9
(iii.) Franciscan-road	76,200	1,124	14,658 0 0	13 0 9	23,511 0 0	20 18 4

In this connexion we have had before us a letter from the Board of Education (November 29, 1905) drawing attention to the high estimated cost of certain schools, the preliminary plans of which have recently been submitted to them for approval. The Board state that the average cost per head in five instances works out at nearly 20*l.* per head for the schools when completed for the full numbers proposed; that there is nothing in the plans as to which they would raise any question, except in regard to the provision of special rooms for instruction in science and drawing; and inquire whether the Council cannot secure that the charge per place for the erection of new schools can be reduced. The Board add that they recognise that the cost of building in and near London is distinctly higher than it is in many other parts of the country, yet they find that even close to London satisfactory schools can be built at a cost per scholar materially lower than that proposed to be incurred in the case of the schools, plans of which have recently been submitted to them.

We have given careful consideration to this matter on several occasions, and have been in communication with the Board of Education with a view to obtaining further particulars of some of the cheaper schools erected by education authorities whose districts are contiguous to London. The Board, however, did not see their way to furnish the Council with these particulars, but suggested that if inquiry were made of the authorities in question no doubt they would be willing to supply the information necessary to assist the Council in its inquiry. Acting upon this suggestion we have communicated with the undermentioned authorities asking them whether they would be good enough to furnish particulars as to the cost and accommodation of any school recently erected under their jurisdiction, and to lend the Council the plans and specification of any such school—Boroughs of Wimbledon, Hornsey, and East Ham, County Councils of Middlesex, Surrey, and Kent, County Borough of West Ham, Urban District Councils of Chiswick and Willesden.

This information will give a basis for a fuller investigation of the question, and, although at the moment we are convinced that the Council should proceed upon the lines at present laid down, the Council may be assured that the question will continue to engage our serious attention, and that we will not fail at once to recommend any possible changes in the direction of economy. . . ."

The committee recommended that working drawings, etc., be prepared.

Mr. McKinnon Wood, M.P., moved that the matter be referred back with a view to getting more information. In his opinion, the cost appeared to be excessive.

Sir Melville Beachcroft seconded.

Canon Jephson explained that one reason why the cost in London was so high was that the Council jobs had been carried out in cement and the school at Croydon was built with mortar. He had visited schools in Switzerland, France, and America, and he believed that the elementary school buildings in London were the best. Whether they were too expensive was a matter for the Council; but he earnestly hoped that these schools would be built, for they were absolutely necessary.

Mr. Stephen Collins, M.P., said that the difference between building in mortar and cement would not come to more than 10s. per place. The great difference between the cost per place needed a much more satisfactory explanation.

In the course of subsequent discussion, Mr. Saunders said that if the Council wanted decent buildings, which would not spoil the neighbourhood and which would be carried out in a sanitary manner, they must not think of erecting them more cheaply. It was not right that for the sake of a few pounds the architectural appearance of our schools should be spoilt.

The amendment was carried on a division by sixty-eight to fifty-one.

Theatre, etc., Works.—Sanction was given to the following works:—

Æolian Hall.—Gallery at the north end of the hall (Mr. W. Cave).

His Majesty's Theatre.—Exits from orchestra, etc. (Messrs. Romaine-Walker & Besant).

Holborn Empire.—Gates across the open passageway from the Holborn Empire into Whetstone Park (Messrs. F. Matcham & Co.).

Royal Victor Hotel.—Alterations in connexion with exits (Mr. E. Stephens).

Payment of District Surveyors by Salaries.—The Building Act Committee again reported as to the future payment of District Surveyors by salaries instead of fees. They stated that they had carefully reconsidered their proposals* in the light of the criticism to which they had been subjected, and they desired to draw the attention of the Council to the undermentioned points in connexion therewith:—

"(1) It was not at any time our intention to ask the Council to do more than approve the general principle of the 'model' scheme, and we now propose to so frame our recommendation as to make it quite clear that the details of our proposals as regards the rearrangement of districts and the appointment of, and salaries to be paid to, new district surveyors will be submitted to the Council for its approval in each case.

(2) We are advised that payment by salaries, as proposed, will not lessen the responsibility of district surveyors under the London Building Acts or affect their status in any way.

(3) Whether the Council decides to pay district surveyors by salaries or not, the prohibition of private practice makes it necessary to rearrange districts so as to provide in every case an income sufficient to attract competent candidates for the office of district surveyor, and in this connexion it should be noted that the order of reference to the Building Act Committee [paragraph A 21 (1)] provides that the districts are to be rearranged by the Committee as opportunities occur, so that the average of the fees received may in no case amount to less than 500*l.* per annum.

(4) Delay in introducing payment by salaries will, so far as can be seen, result in increased cost, and we are supported in this opinion by the fact that, while in 1890 the cost would have been 40,638*l.*, the cost had risen in 1905 to 50,748*l.*

(5) There are now eight districts vacant, two districts where the district surveyors are not acting owing to ill-health (one is mentally weak) and six districts where the surveyors are over seventy years of age, so that the present time is an exceptionally favourable one for the introduction of a new system of payment.

Having regard to the near approach of the next financial year and the obvious advantage of any system of payment by salaries commencing at the beginning of the financial year, we are of opinion that the matter should be dealt with at the earliest possible moment, and with a view to members of the Council having before them all possible information on the subject we have given instructions for a copy of a memorandum, prepared by our chairman, answering in detail the various criticisms made with regard to our proposals, to be sent to each member of the Council.

We understand that the Finance Committee are prepared to report on the proposals, and we recommend:—

(*a*) That as from and including April 1, 1906, all district surveyors be paid a fixed salary by way of remuneration instead of fees; that the amount of salary to be paid to each of the present district surveyors be equal to the amount of the average of the fees received in his districts during the seven years ended December 31, 1905, as provided in sect. 158 of the London Building Act, 1894; and that the Building Act Committee do submit the necessary recommendations to give effect to this decision.

(*b*) That with regard to the existing and all future vacancies the Building Act Committee do submit to the Council such recommendations, giving full particulars of their proposals in every case, as will be in general accord with the 'model' scheme described in the report of the Building Act Committee, dated February 12, 1906."

The report of the Finance Committee was practically the same as their previous report, printed in our issue for February 3.

The consideration of the matter was adjourned.

White Hart-lane Estate—Erection of Cottages on the Tower-gardens Section.—The Housing of the Working Classes Committee recommended, and it was agreed:—

"That the tender of Mr. G. E. Pulford for the erection of twenty-nine first-class cottages, eight second-class cottages, and twenty-three third-class cottages for the sum of 11,415*l.*, and the tender of Mr. G. D. Barns for the erection of three first-class cottages, thirty-six second-class cottages, and twenty-three third-class cottages for the sum of 10,855*l.* on the first part of the Tower-gardens section of the White Hart-lane estate be accepted; that payments to the extent of 80 per cent. of the work done be made to Mr. Pulford and Mr. Barns in fortnightly instalments upon the architect's certificate, that a further 15 per cent. of the value be paid on the completion of each cottage, and that the remaining 5 per cent. be paid within one month after the completion of each cottage."

The Council adjourned at half-past seven o'clock.

* See our issue for December 16, 1905.

APPLICATIONS UNDER THE 1894 BUILDING ACT.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Islington, East.†—The retention of an addition in front of No. 198, Essex-road, Islington (Mr. W. H. Winder for Mr. T. Singlehurst).—Consent.

Strand.—Projecting balconies at Nos. 93 and 94, Long-acre, Strand, abutting upon Wilson-street (Messrs. F. Chambers & Son for Messrs. Odhams, Limited).—Consent.

Brixton.—A deviation from the plan approved for the erection of blocks of buildings on a site on the north-west side of Coldharbour-lane, Brixton, abutting also upon Lilford-road and Kenbury-street, so far as relates to an increase in the height of the buildings next Coldharbour-lane (Mr. E. E. Bird).—Consent.

Marylebone, West.—Buildings on the north-east side of Maida-vale, St. Marylebone, to abut upon Maida-vale and St. John's-wood-road (Mr. V. S. Galsworthy for the Governors of Harrow School).—Refused.

Paddington, North.†—One-story shops in front of Nos. 431 and 433, Edgware-road, Paddington (Messrs. Gardiner & Theobald for Messrs. Matthews & Sons, Limited).—Refused.

Paddington, North.†—One-story shops in front of Nos. 435 and 437, Edgware-road, Paddington (Messrs. Gardiner & Theobald for Meux's Brewery Company, Limited).—Refused.

Paddington, North.†—One story shops in front of Nos. 439 to 451 (odd numbers only), Edgware-road, Paddington, to abut also upon Maida-hill,

West (Messrs. Boehmer [& Gibbs] for Mr. W. Hirsch).—Refused.

Width of Way.

Greenwich.—For the retention of buildings between Nos. 7 and 9, Coldbath-street, Greenwich, with a forecourt fence at less than the prescribed distance from the centre of the roadway of such street (Messrs. Cooper & Goulding).—Consent.

Bethnal-green, North-East.—Buildings on the north-east side of Wharf-road, Bethnal-green, with external walls at less than the prescribed distance from the centre of the roadway of such street, as shown on the plan (Messrs. M. W. King & Son).—Consent.

Width of Way and Working-Class Dwellings.

Holborn.—Deviation from the plans approved for the erection of dwelling-houses to be inhabited by persons of the working-class, on a site abutting upon Leather-lane, Portpool-lane, Verulam-street, and Baldwin's-place, Holborn (Mr. R. Robertson for the Housing of the Working Classes Committee of the Council).—Consent.

Formation of Streets.

Wandsworth.—That an order be issued to Mr. E. B. I'Anson, sanctioning the formation or laying-out of new streets for carriage traffic on the Mortimer estate, Streatham High-road, Streatham (for Mrs. Mortimer).—Consent.

Norwood.†—That an order be issued to Mr. C. Death sanctioning the formation or laying-out of a new street for carriage traffic to lead from Trinity-road to Norwood-road, Lambeth.—Consent.

Lewisham.—That an order be issued to Mr. W. Wilkinson sanctioning the formation or laying-out of a new street for carriage traffic in continuation northward of Oaksford-avenue, Wells-road, Sydenham (Mr. T. Covell).—Consent.

Hammersmith.†—That an order be issued to Messrs. H. Macintosh & R. J. W. Newman refusing to sanction the formation or laying-out for foot traffic only of streets to lead from Uxbridge-road to Bulwer-street, Shepherd's-bush, and the erection of a building in connexion therewith.—Refused.

The recommendations marked † are contrary to the views of the local authorities.

ARCHITECTURAL SOCIETIES.

LIVERPOOL ARCHITECTURAL SOCIETY.—This Society held an adjourned meeting at its rooms, Harrington-street, on the 19th inst., when the discussion was resumed on the paper by Mr. T. T. Rees on "Architects and City Improvement."* Mr. S. P. Morter presided. Mr. T. Myddelton Shallcross opened the discussion and criticised the various sections of the paper in detail. He dealt at length with streets, buildings, and open spaces, and suggested that prizes might be offered for the best suggestion of improving Liverpool in its future expansion. With regard to street advertisements, Mr. Shallcross said there seemed a need for the fixing of some standard to be attained by advertisers in their own interests and those of the general community. He suggested improvements to the city might be effected by the remission of some portion of the rates to those who voluntarily gave to the community such benefits as air spaces and ornamental trees, and so on, or to the householder who took steps to lessen the smoke nuisance. Mr. Hastwell Grayson followed, and advocated the establishment of a movement on the lines of the Cockburn Society of Edinburgh. This Society did much good work in Edinburgh on the lines aimed at by those who wished to see the city beautified. For instance, when an insurance society desired to raise a building of red brick, the Society, by influencing public opinion, obtained the substitution of stone for brick, Edinburgh being essentially a stone city. Objectionable advertisements were also dealt with in the same way, and Mr. Grayson suggested that an organisation working in similar fashion in Liverpool would achieve beneficial results.—An interesting discussion took place, during which speeches were made by Mr. Rathbone, Professor Reilly, Mr. H. B. Bare, Mr. P. C. Thicknesse, Mr. Hall Neale (President of the Liverpool Academy), Mr. Abraham, and others. The following resolution was adopted:—"Having regard to the commercial importance and prosperity of the city of Liverpool, this members' meeting of the Liverpool Architectural Society considers the appearance of the city should be worthy of such commercial greatness, and should express its own dignity. This meeting realises that this is only to be done by the combined efforts of all our worthy citizens. It therefore suggests to the Council of this city the advisability of having a committee to deliberate as to the best means of obtaining that end." It was also resolved:—"That the best thanks of this meeting be tendered to the various railway and other companies who have kindly sent copies of their posters in illustration of the advances made in well-designed poster production in England."

*See our issue for Feb. 3.

ENGINEERING SOCIETIES.

THE JUNIOR INSTITUTION OF ENGINEERS.—During the past few years this Institution has in various ways exercised itself in promoting a closer relationship between the professions of engineering and architecture. A movement in this direction took the form of a very fully illustrated lecture on "Architectural Design and Expression," which was delivered before the Institution at the Westminster Palace Hotel on Friday last week by Mr. H. Heathcote Statham, Mr. Lewis H. Rugg, A.M.Inst.C.E., presiding. The lecturer first pointed out the distinction between architecture and engineering, and dealt with the questions of the probable origin of the column and its wide influence on architecture. He then compared Egyptian columnar architecture with Greek, and showed the difference between imitative architecture and the quality of style. Architecture was not an imitation of nature. He cited the Parthenon as an example of intellectural refinement. The gradual transmutation of the column into the buttress was treated, and considerations in regard to mouldings, scale, and ornament were touched upon. Illustrations from some of the cathedrals were depicted, and the lecturer passed on to the architectural element in engineering works. Some interesting observations followed with respect to railway-stations, bridges—often a fit meeting-ground of architecture and engineering—and suggested principles of treating masonry bridges were introduced, comments on some existing examples and conclusions derived from them being given. He held that judgment in regard to architecture rested on acquired perception rather than on theory. A vote of thanks was accorded the lecturer, and the speakers in the discussion were Messrs. J. H. Pearson, J. Rennie, W. J. Tennant, J. Horsfield, S. Bylander, J. W. Nisbet, G. T. Bullock, G. Peyrecave, and Mr. Rugg.

THE INSTITUTION OF CIVIL ENGINEERS.—At the ordinary meeting on Tuesday, the 20th inst., Sir Alexander Binnie, President, in the chair, the papers read were:—"A Plea for Better Country Roads," by Mr. G. R. Jebb, M.Inst.C.E.; and "Country Roads for Modern Traffic," by Mr. J. E. Blackwall, Assoc.M.Inst.C.E. The author of the first paper, after pointing out that the proper maintenance of the country highways is a matter in which the whole community is interested, that the traffic on them is probably greater now than it ever has been, that many of them are badly maintained at extravagant cost, and that a new kind of traffic, viz., the motor-car traffic, has sprung up during the past few years, urges that the present is a specially fitting time for engineers to consider:—

(1) Whether they are adopting the best methods of maintaining the roads;

(2) What improvements are necessary to fit the roads for the new and increasing traffic.

With regard to (1) the author specially advocates that the roads should be better drained, and kept dry and free from mud; and he enumerates some of the advantages which the public would enjoy if this were done. Among these advantages is the fact that the dust nuisance, which has become a very serious question, would be practically abolished. He considers that the extra cost of labour would be more than counterbalanced by less outlay on future repairs. With regard to (2) the author considers it impossible to lay down any general rules that would be applicable to all roads in all districts; he recommends that the roads should be classified, and that they should be strengthened and improved on scientific principles according to special circumstances. More care should be taken in the selection of stone for macadam, and he deprecates using local stone because it is the cheapest. He invites discussion, and hopes engineers to county councils and others will state the result of their experience in the maintenance of roads, and especially as to the use of "Tarmac" or other dust-preventing material. He thinks that money would be better expended in improving the existing roads than in making new ones. The author also strongly recommends that all country roads should be repairable by the county councils, and points out generally, and also by reference to a special case, some of the serious disadvantages of the present system, under which the main roads only are repairable by the county councils, all other roads being repairable by district and borough councils.

If the author's suggestion as to keeping the roads free from mud were adopted throughout the country, a large number of additional labourers would be permanently needed, and he believes their work would be remunerative. If the roads were generally improved, a further large number of men would be wanted for several years to come, and the author thinks that no better or more useful work could be found for some of the able-bodied men who now swell the ranks of the unemployed, and that the work would be free from the serious objections which have been raised to many of the schemes which have been suggested for the benefit of that class.

The author of the second paper points out that it is now universally acknowledged that a radical improvement is required in the main roads of England, so that heavy traffic, consisting of traction engines, motor-lorries, and heavy carts, shall not cut up the surface and render it inconvenient for light, fast traffic, including motor-cars, light carriages, and cycles, and that foot passengers shall be protected from being run down or choked with dust by motor-cars. He suggests the gradual alteration, as funds allow, of existing main roads into twin roads, one for heavy traffic and the other for light, separated by a fence and a footpath. From what little data at present exist on the subject of the cost of maintenance of roads required for heavy traffic only, or for light traffic only, it appears probable that a saving of expense would in the long run result; and there would be, beyond doubt, advantages to the users of the road by separating the traffic. Whether the advantages would be worth the initial cost of alteration is a matter of opinion.

The details of construction would vary considerably according to local circumstances, the amount and weight of traffic, the value and nature of adjoining land, the cost of material delivered, etc. The minimum width of the two roads and footpath together should be at least 46 ft. between fences, 21 ft. for each road and 4 feet for the footpath. The surface water would be conducted into a pipe-drain under the footpath by pipes laid near the surface under the light road, and by cross-gutters over the heavy road, both roads sloping down towards the outer sides and towards the footpath. The two roads would converge into one at the entrance of a village or any confined space. All crossings of roads would be notified by sign-posts, and speed of traffic reduced to a safe maximum. At gateways into fields on the side of the light road a space would be left in the wire fence, closed by a rail pivoted to a post near one end, and opening upwards, assisted by a counterpoise at the other end.

For purposes of considering the probable cost of conversion of a road into a twin road the items which would occur on a typical road are set out below with suggested prices. It is assumed that the road, originally 30 ft. wide, is widened to 46 ft. between fences, and that the extra land required for this widening is given by the adjoining owner for the good of the public.

	Per lineal yard. £ s. d.
Moving fence	0 1 0
Removing sod and earth	0 0 2
Foundation stone, delivered	0 4 0
Road metal (3-in. gauge), delivered	0 3 4
Labour, packing, spreading, and rolling	0 2 0
Labour, making up footpath	0 1 0
Making up light road	0 9 6
Fencing	0 0 7
	£1 1 7

This would be practically 1,900*l.* per mile.

COMPETITION.

NATIONAL CONGRESS HALL, BRAZIL.—The Commercial Intelligence Branch of the Board of Trade have received from H.M. Consul-General at Rio de Janeiro an extract from the *Brazilian Review* giving particulars of a competition for the presentation of plans for the construction of a building for the National Congress of Brazil. Projects destined to compete will be received in the Secretarial Department of the Federal Senate up to 4 p.m. on May 31 next. Three prizes, of 15,000, 10,000, and 5,000 milreis, respectively, will be awarded to the authors of the best projects presented, and a further sum of 5,000 milreis is to be spent in acquiring projects which, although not awarded prizes, are in the opinion of the judging commission deserving of being acquired for the National Congress. The text of the programme, in accordance with which projects must be drawn up, may be seen at the offices of the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

BOOKS RECEIVED.

IMPRESSIONS OF JAPANESE ARCHITECTURE. By Ralph Adams Cram. (John Lane. 10s. 6d.)

MODERN BUILDINGS: THEIR PLANNING, CONSTRUCTION, AND EQUIPMENT. By G. A. T. Middleton, A.R.I.B.A. (The Caxton Publishing Company. 10s. 6d.)

BRIDGE AND STRUCTURAL DESIGN. By W. Chase Thomson, M.Can.Soc.C.E. (Engineering News Publishing Company, New York. 8s.)

TRADE CATALOGUES.

WE have received from the Leeds Fireclay Company three catalogues containing illustrations and prices of various sanitary goods manufactured by Messrs. Joseph Cliff & Sons, one of the associated firms in the Company. The catalogues are very well produced on good paper, all the illustrations being coloured, and full information is given as to qualities and prices. One catalogue deals with porcelain-enamelled fireclay baths and lavatories, the trade name for the ware being "Imperial Porcelain." The baths are made in various sizes, either taper or parallel, and with either plain rims or glazed rolls; the outside may be plain, white-glazed, or stone-enamelled in a selected tint. Special baths, such as sitz, foot, and sponge, are also shown, together with a number of taps, and other accessories. The lavatories are of a substantial character suitable for schools and factories as well as for houses and hotels; the new overflow for the "Carlton" basin is a great improvement on the older type. A second catalogue contains illustrations of fireclay closets and urinals. All the pedestal closets are of the usual wash-down type, but trough-closets are also shown. The urinals are of the stall type in salt-glazed ware or porcelain-enamelled fireclay, and are of different patterns suitable for the angles of rooms, for straight walls, and for independent groups. Various plans of urinal ranges are given, and there is a sheet of illustrations of flushing-cisterns, sprays, etc. The third catalogue deals with sinks of various kinds from the inexpensive cottage sink in brown-glazed stoneware to the special sinks for hospitals, etc. The combined sink and slop-sink in one piece of fireclay with separate trap to the slop-sink will prove useful, and the "open-overflow" sink, with drainer and skirting in one piece, is also a good fitting. Illustrations of slop-sinks, wash-tubs, bed-pan sinks, post-mortem and mortuary tables, sink fittings, etc., are also given.

From Messrs. G. Shrewsbury & Co. we have received a catalogue of their "Calda" water-heaters and other appliances. The "Calda" heaters have been extensively used for a generation for heating the water required for baths and other purposes, and many of the varieties serve the purpose admirably. It is, we think, a serious error of judgment to say that ventilating flues are "unnecessary," even though the statement is qualified by adding "if the bathroom is fairly large and the window open an inch or two while the gas is alight." It is true that such flues are not absolutely necessary in the case of geysers in which the products of gas-combustion are condensed by the water in its passage through the fitting, but such geysers do not yield *pure* hot water. The claim is made on page 2 that all "Caldas" yield "pure hot water . . . suitable for drinking and culinary purposes," but, unless we are mistaken, the "Unique" and "Favourite" Caldas shown on page 9 are of the condensing type. The catalogue contains illustrations of oil-heated Caldas, baths, gas-heated conservatory boilers and pipes, washing-coppers, etc.

The Down-draught Fireplace Co. have sent us a catalogue of Regester's patent down-draught fireplaces for burning anthracite or any other fuel. The special feature is the pair of openings (one at each side of the fire) level with the bottom of the grate, from which concealed smoke-pipes are carried up to the main smoke-flue above the fire. The illustrations do not show any method of regulating the draught in the upper and lower flues. Some of the grates are made with hot-air chambers, and ducts can be formed to convey the heated air into a room above.

The David Maydole Hammer Co., of Norwich, U.S.A., send us their catalogue of hammers as used by bricklayers, masons, tile-setters, joiners, engineers, machinists, boiler-makers, blacksmiths, and others. The heads of all hammers made by this firm are forged from crucible cast steel, and the standard manufactures of the firm include some 343 styles, sizes, and finishes. The fact that a large establishment is kept fully employed in the manufacture of hammers alone serves as a practical proof of the reputation for high quality enjoyed by the Maydole hammers, and illustrates the system of industrial specialisation practised in the United States.

Correspondence.

R.I.B.A.—ELECTION OF FELLOWS.

SIR,—In compliance with requisitions in writing duly signed according to the provisions of By-law 9, the election of the twenty-eight candidates for Fellowship, nominated by the Council for election at the business meeting on the 5th March, will be taken by voting papers.

The Council are aware that these requisitions proceed from a widespread feeling that the Institute should avail itself of the permission granted by clause 3 of the Charter to declare that every person desiring to be admitted a Fellow shall be required to have passed such examination or examinations as may be directed by the Royal Institute.

Sympathising with this feeling, the Council adopted it as their policy in 1904, and at a special general meeting, held on February 29, 1904, a resolution was passed to the effect that after December 31, 1906, no person shall be admitted a Fellow unless he is either an Associate or has passed the examination or examinations qualifying him as an Associate.

On the same evening, however, the general body passed the following resolution of the Royal Institute:—

"That during the intervening period (*i.e.*, till December 31, 1906) every architect eligible under the Charter for election who desires to join the Institute as a Fellow be encouraged to do so."

In consequence of these resolutions becoming generally known in the profession a large number of eligible candidates have come forward during the last two years. The Council are convinced that it is to the interests of the Institute that thoroughly qualified architects in various parts of the country whose age and busy practice preclude from entering for examinations should become Fellows before the door is for ever closed against them.

At the same time the Council has subjected the qualifications of candidates during the last two years to the same careful scrutiny and inquiry as has been their practice during the whole existence of the Institute.

To avoid any possible misapprehension the Council declare that the last election of Fellows under the existing system will be on December 3, 1906.

In view of the requisitions for a poll the Council think it right that members should be reminded of the above facts, and, as one adverse vote in four excludes, they desire to direct the attention of members to the gravity of their responsibility when they fill up their voting papers.

ALEXANDER GRAHAM, Hon. Secretary.
W. J. LOCKE, Secretary.
Institute of Architects, 9, Conduit-street, February 21.

FELLOWSHIP OF THE R.I.B.A.

SIR,—Will you permit us to return to this subject, in the hope of making clearer the points raised.

If only we could have the actual position and purpose of the Fellowship definitely explained, we should all know better where we stand. Surely it may be assumed that the original idea was to make the Fellowship a sign of eminence, more or less; otherwise why have a second class at all? And is not this confirmed by the fact of the subscription being higher? And does not the much discussed resolution of the Institute to shortly elect this class only from the ranks of the Associates prove it? If the contention that every competent architect has a *right* to election as a Fellow is correct, it seems to us that to force him after this year to go through an examination will be not only a distinct hardship, but an inconsistency. We cannot see what purpose of a worthy kind the Fellowship fulfils, unless it is to recognise a select or eminent class of men.

Our views (which we have reason to know are very widely shared) seem to be much misunderstood in London. We are working solely for fair play, and for the dignity of the R.I.B.A. So far are we from holding that the Associate's examination is the main essential, that we would willingly see the entrance to *our* class widened, and a man's practical work accepted in substitution for some or even all of the examination work; so long as it was definitely ascertained that the conception and details were entirely his own.

But, knowing the educational value of preparation for the examination, and remembering the constant emphasis hitherto placed upon it by the leaders of the R.I.B.A. and the Provincial Societies, we are bound to insist that it is (1) unfair to such examined men, (2) derogatory to the dignity and consistency of the Institute, and (3) unworthy of the candidates, as architects and gentlemen, to bring about this unseemly scramble for easy entrance to the Institute.

We are informed that "the By-laws allow this." We admit it; but the By-laws also allow the means of protest—the demand for a poll of the Institute. In demanding this, and for the whole of the candidates, we have acted on principle only; and we earnestly hope our action will not cause any injustice to the Associates in the nomination list.

We are further told that "the close time will expire in a year from now; cannot things be allowed to take their course"? This we would gladly have done; but our information shows that due care is not exercised by the Council in their nominations. We must protest, and have already effectively protested, against the official nomination of men who hope by the Fellowship to obtain that entrance to the Institute which they have signally failed to obtain as Associates, or of men whose practice is chiefly connected with Estate Agency and kindred work.

One other remark in conclusion. Of the present members of the R.I.B.A. Council, we find that more than 75 per cent. have at some time qualified as Associates. No further argument is needed; the Council has itself fully justified our contention.

Signed on behalf of the meeting of Leeds Associates.
W. G. SMITHSON, Chairman.
FREDK. MUSTO, Secretary.

Leeds, Feb. 21.

SIR,—I must beg leave to say a few words on behalf of the London men, in reply to Mr. Musto's letter.

I number among my friends a good many Associates who are by no means indifferent to the course of events during the last year or so, and I think I shall do no injustice to the majority of the London Associates when I say that it is an excess of discretion, rather than a lack of valour or conviction, that prevents their openly joining their provincial comrades and presenting a united front.

It is undoubtedly the opinion of a great many of us that the present policy of the Council is a mistaken one, inimical to the best interests of the Institute and derogatory to the dignity of the Fellowship; but few have, or can have, the opportunity of taking part in an ordinary election, and fewer still, it is to be feared, can afford, here in London, to be publicly identified with the whole-hearted action of the provinces, with its attendant risk of forfeiting the goodwill of their elders.

Nevertheless, a very strong current of opinion undoubtedly exists even in London; and as the question seems now likely to be brought to a definite issue, the opinion of the majority will doubtless be ascertained, and the future policy of the Council ordered accordingly.

PERCIVAL W. HAWKINS.

THE SOANE MEDALLION PRIZE DESIGN.

SIR,—It may interest your readers if you can add the following particulars as to the author of this scholarly, beautiful, and masterly design for Lord Bacon's Ideal Palace.

Mr. W. S. George is the son of an architect practising at Ashton-under-Lyne. After training in his father's office, he obtained a Lancashire County Council Scholarship in art, and was awarded a Royal Exhibitionship by the Board of Education. He entered the Royal College of Art in 1901 and obtained the travelling studentship in architecture of the College in 1903.

The interest and charm of Mr. George's draughtsmanship can be estimated from the plates that you published last week. BERESFORD PITE.

Royal College of Art, Feb. 21.

ROYAL SANITARY INSTITUTE.

SIR,—Many of your readers will, I think, be interested in having particulars of the Saxon Snell Prize.

This Prize was founded to encourage Improvements in the Construction or Adaptation of Sanitary Appliances, and is to be awarded by the Council of The Royal Sanitary Institute at intervals of three years, the funds being provided by a legacy bequeathed to the Institute for this purpose by the late Henry Saxon Snell, F.R.I.B.A.

The Prize consists of 50*l.* and a medal of the Institute, and is offered in the year 1906 for an Essay on "Suggestions for Improvements in Sanitary Appliances for use in Workmen's Dwellings and Labourers' Cottages under the varying conditions of Water Supply and Drainage usually obtaining in Towns and Villages."

E. WHITE WALLIS.
Secretary.

THE *PURPLE PATCH*.

SIR,—In the course of your very kind notice of the *Purple Patch* in your last issue you refer to a "delightful mock-mediæval" headpiece. This illustration was made from a very careful tracing of Mr. Eliot Hodgkin's reproduction of the original woodcut, which is perfectly genuine; the text also is a careful transcript, except in the matter of "long S's," which are unfortunately lacking in our fount of type. I think this slight correction is due to Mr. Hodgkin (whose name was quoted in the article), as he is one of the leading English authorities on early typography.

G. F. BLACKBURNE DANIELL,
One of the Editors, *Purple Patch*.

*** Evidently we overlooked the prefatory remarks above the drawing, which we took to be head-piece of the article. It was, as Mr. Pleydell said of Dominie Sampson, "a curiosity worth preservering."—ED.

WEST WALTON CHURCH, NORFOLK.

SIR,—I should be obliged if you would allow me to ask through your columns if any of your correspondents can inform me whether the ground plan of West Walton Church, Norfolk, has been published in any book, and, if so, where it is to be found. BERNARD J. MCADAM.

COURT OF COMMON COUNCIL.

A MEETING of the Court of Common Council was held at the Guildhall on Thursday, last week, the Lord Mayor presiding.

Street Improvements.—On the recommendation of the Improvements and Finance Committee, it was agreed to serve notices to acquire so much of the premises of 117 and 120, Fleet-street, and 33, Throgmorton-street, as is required for the improvement of those thoroughfares, and that 2,800*l.* should be offered for the last-named premises. The same committee also submitted arrangements, which the Court adopted, with St. Bartholomew's Hospital for acquiring their freehold interest in the ground needed for the improvement of Giltspur-street for the sum of 2,221*l.*, and with Messrs. Blessey for the freehold of the land required to widen the public way in front of 2 and 3, Warwick-lane, for 2,000*l.*

Heating of the Library.—The Library Committee were authorised to carry out an improvement of the heating apparatus in the library at a cost not exceeding 100*l.*

The Student's Column.

SOME MATHEMATICAL METHODS AND USEFUL DATA FOR ARCHITECTS.—VII.

SHORT CUTS TO DIVISION.

THE process of division can be much simplified by various devices, generally similar to those explained in the two preceding articles.

Contracted Method.

In cases where the numbers to be dealt with contain several decimals, the process of division can be considerably abbreviated without affecting the substantial accuracy of the result, as the quotient can be obtained correctly to a reasonable number of decimal places.

Rule.—The contracted method consists in cutting off a figure at the right-hand of the divisor after each new figure has been obtained in the quotient; but carrying any figures furnished by mental multiplication of the figures rejected from the divisor, and adding 1 to the figure carried if the next figure of the mental product has the value of 5 or more.

In the following examples the numbers are the same as those used in Examples (1) to (3) in Article V., p. 147.

Example (1): Divide 512·2122945 by 58·645 so that the quotient shall be correct to four places of decimals.

Contracted Method.		Ordinary Method.	
58645)5122122945(87341		58·645)5122122945(87341	
469160	=8·7341	469160	=8·7341
43052		430522	
41052		410515	
2000		200079	
1759		175935	
241		241444	
235		234580	
6		68645	
6		58645	
–		10000	

As the result is not required to contain more than four decimals, we reject the figures 2, 9, 4, 5 in the dividend, and proceed as follows:—

Line (1).—Multiply the divisor by 8 to obtain the product 469160, which is subtracted from 512212, leaving the remainder 43052.

Line (2).—Reject the right-hand 5 in the divisor and divide into 43052. Multiplying 5864 by 7 take the cancelled 5 into account mentally, thus $5 \times 7 = 35$; then as 5 is to be taken as 10, carry 4 instead of 3 to the product of 4×7, making that individual product $4 + (4 \times 7) = 32$. Consequently the 2 is set down and the 3 carried to the next multiplication in the same line. The process is continued in the usual way until 41052 is obtained, this being subtracted from 43052, leaving 2000 as remainder.

Line (3).—Reject the figure 4 in the divisor, multiply 586 by 3, carry 1 from the mental multiplication of the two rejected figures, and proceed as in Line (2) to obtain 1759, which taken from 2000 leaves 241.

Line (4).—Reject 6 in the divisor, multiply 58 by 4, carrying over 3 from the mental multiplication of the figures rejected from the divisor. Proceed as before, obtaining the remainder 6.

Line (5).—Cancel 8 in the divisor, multiply by 1 carrying over 1, the value of the rejected figures.

The last figure in the quotient is 1, the required answer, after insertion of the decimal, being 8·7341.

By the preceding example it is demonstrated that the contracted method is quite as suitable for practical purposes as the ordinary process, while the saving of time and space is too obvious to require comment.

As in the converse process of multiplication we can adopt the contracted system for the treatment of large whole numbers in cases where minute accuracy in the units, tens, hundreds, or thousands places is not of importance.

The Italian Method.

This method of abbreviation has the effect of shortening the process of division, while still permitting exact results to be obtained. Instead of writing down the various products, and the difference between these products and the lines immediately above these, it is only necessary to record the difference between the separate figures of each product and the figures over them.

It is certain that familiarity with the Italian method enables the operator to diminish the mental exertion required for the performance of a given division sum by a very large proportion, because the complete calculation of the separate products of the divisor by each digit in the quotient is not necessary.

Example (4): Divide 6843580648 by 7324.

The following are the workings by the Italian method and the ordinary method:—

Italian Method.	Ordinary Method.
7324)6843580648(934404	7324)6843580648(934404
	65916
25198	25198
32260	21972
29646	32260
35048	29296
5752	29646
	29296
	35048
	29296
	5752

The process is conducted as follows:—

Line (1).—Under the dividend draw a line to indicate the digits necessary to express a number greater than the divisor. In this example the line extends below the figures 68435. By inspection the first figure in the quotient is evidently 9 (representing 900,000). Then, as $4 \times 9 = 36$, we have to deduct 36 from 5, but as this cannot be done we borrow 4 (representing 40) and get $45 - 36 = 9$, which is the first figure to be written. The figure 4 has to be carried to the next product $2 \times 9 = 18$ and $18 + 4 = 22$, which taken from the sum of 3 and 20 borrowed leaves $23 - 22 = 1$, this again being the figure to be recorded, while the 2 borrowed is carried forward. Next we have $2 + (3 \times 9) = 29$, which deducted from $4 + 30 = 34$ gives 5 as the difference to be written and 3 to be carried. Finally, $3 + (7 \times 9) = 66$, and taking this from 68 we are left with 2, the last figure of the difference 2519. Repetition of the same process for the other figures of the dividend gives the quotient 934,404 with 5752 as remainder.

A more facile mode of dealing with the figures is to add instead of subtracting the figures in ascertaining the differences.

Thus:—

$(4 \times 9) + 9 = 45$ (carry 4)
$4 + (2 \times 9) + 1 = 23$ (carry 2)
$2 + (3 \times 9) + 5 = 34$ (carry 3)
$3 + (7 \times 9) + 2 = 68$

The figures printed in italics represent the first figure of the quotient and those in thick-faced type constitute the first line of differences.

The other figures in the quotient and the lines of differences are ascertained in a similar manner, giving the quotient 934,404 +, as before.

Comparison of the working with that under the ordinary system will be sufficient to indicate how great a saving of time can be effected by using the Italian method.

Simplified Method by Reduction of the Terms.

If the divisor and the dividend can be reduced materially by the use of the greatest common divisor (termed the *Greatest Common Measure*, or *G. C. M.*) of the two numbers, considerable simplification of division can frequently be effected.

Even if the determination of the G. C. M. would not repay the trouble involved, time can often be saved by using a smaller common measure which can be ascertained by inspection.

Thus we have available two variations of the same principle, which is illustrated in the following examples:—

Example (1): Divide 3072 by 108.

Here the G. C. M. = 12, and the process of reduction and division is:—

12)108 3072
9)256
28·44

Example (2): Divide 1285 by 35.

Here both numbers are evidently divisible by 5. Hence we have

5)35 1285
7)257
36·71

Division by Certain Numbers.

To divide any three-figure whole number by 11.

Rule.—In any three-figure whole number in which the second digit is equal to the sum of the first and third digits, the first and third digits represent the quotient of the number after dividing by 11.

Example (1):—

$792 \div 11 = 72$
$242 \div 11 = 22$
$341 \div 11 = 31$
$110 \div 11 = 10$

Note.—The same principle can be applied conveniently to the division of some three-figure and four-figure numbers by multiples of 11, as demonstrated by the following examples:—

$484 \div 22 = 22$
$748 \div 22 = 34$
$1386 \div 22 = 63$
$693 \div 33 = 21$
$1089 \div 33 = 33$
$2079 \div 33 = 63$

A little practice will enable the user to deal with suitable numbers in this way, even when figures have been carried from one place to another.

To divide any whole number by 11·25, 112·5, 1125, *and so on.*

Rule.—From the number subtract one-ninth of that number, and by a decimal point mark off from the right-hand end of the result one, two, or more figures, according as the integral part of the divisor represents tens, hundreds, and so on.

Example (2): Divide 72543 by 11·25.

9)72543
8060·33
6448·266 = 6448·266

To divide any whole number by 12·5, 125, 1250, *and so on.*

Rule.—Multiply the number by 8, and mark off by a decimal point as many figures from the right-hand end of the number so obtained as there are figures in the integral part of the divisor.

Example (3): Divide 72543 by 12·5.

72543
8
580344 = 5803·44

To divide any whole number by 13·3, 133·3, 1333·3, *and so on.*

Rule.—From the number subtract one-fourth of that number, and by a decimal point mark off from the right-hand end of the result, one, two, or more figures according as the integral part of the divisor represents tens, hundreds, and so on.

Example (4): Divide 72543 by 13·3.

4)72543

18135·75

54407·25 = 5440·725

To divide any whole number by 14·2857, 142·857, 1428·57, *and so on.*

Rule.—Multiply the number by 7, and mark off by a decimal point as many figures from the right-hand end of the number so obtained as there are figures in the integral part of the divisor.

Example (5): Divide 72543 by 14·2857.

72543

7

507801 = 5078·01

To divide any whole number by 15, 150, 1500, *and so on.*

Rule.—From the number subtract one-third of that number, and by a decimal point mark off from the right-hand end of the result, one, two, or more figures according as the divisor represents tens, hundreds, and so on.

Example (6): Divide 72543 by 15.

3)72543

24181

48362 = 4836·2

To divide any whole number by 16·6̇, 166·6̇, 1666·6̇, *and so on.*

Rule.—Multiply the number by 6, and by a decimal point mark off from the right-hand end of the result one, two, or more figures according as the integral part of the divisor represents tens, hundreds, and so on.

Example (7): Divide 72543 by 16·6̇.

72543

6

435258 = 4352·58

To divide any whole number by 25.

Rule.—Multiply the number by 4, and mark off by a decimal point the two right-hand figures of the number so obtained.

Example (8): Divide 72543 by 25.

72543

4

290172 = 2901·72

GENERAL BUILDING NEWS.

CHURCH, TOTTENHAM.—The Lord Mayor laid the foundation-stone of the permanent Church of St. Philip the Apostle, South Tottenham, the building being intended to supersede an iron mission church in Philip-lane, connected with Holy Trinity, Tottenham. Accommodation for a congregation of 750 will be afforded by the new church, which will be built in brick and stone by Dove Brothers, from Mr. J. K. Cutts's designs.

ROMAN CATHOLIC CHURCH, READING.—The new Church of St. William, in Upper Redlands-road, Reading, was opened recently. The church will, when completed, be 90 ft. long and 50 ft. wide, with seating capacity for 450 persons, but until sufficient money is raised the erection of the sanctuary will remain in abeyance, and a building 63 ft. long by 24 ft. wide, capable of holding 200 persons, has been erected. The architects are the Rev. Canon A. J. C. Scoles and Mr. G. Rayment, of Basingstoke. The church is built of red brick with stone facings. The builder is Mr. W. Hawkins, Reading.

PROPOSED CHURCH, BURNLEY.—The new Church of St. Cuthbert is to be built in Townley-street, Burnley-lane. The plan is the usual one of nave with north and south aisles, chancel, south chapel, and vestries, the organ being in the north chancel aisle. The west wall of the nave is segmental in form so as to provide a baptistry, and at the south-west corner a bell turret rises. Two porches on the south side give access to the church, and there is an emergency exit on the north. Six arches on each side divide the nave and chancel from the aisles and chapel, and carry the clearstory walls, which are pierced with lancet-headed windows. The nave and aisles accommodate 450, the chapel 42, and the chancel 40. The walls are to be faced inside and out with Accrington red plastic bricks, having external dressings of Cullingworth stone and internal dressings of white Hollington stone. All the roofs are to be of wrought pitch-pine, open timbered, boarded and felted, and covered with north country slates. The floors in the nave and aisles to be of joists and boards under the seats, and polished flags in the passages, the chancel and chapel of [illegible] and wood blocks respectively. The designs are by Mr. R. B. Preston, architect, Manchester.

CHURCH RESTORATION, HUNTINGFIELD.—The restoration of Huntingfield Church, which was commenced some ten years ago, has now been completed. The work has been executed by the contractor, Mr. Robert Etheridge, of Fressingfield, and the masonry by Mr. Perfitt, of Harleston, from plans and designs and under the supervision of Mr. C. H. Lohr, architect, of London and Leicester.

SCHOOL, HANWELL.—A new school has just been opened at Oaklands-road, Hanwell. The Oaklands-road School affords accommodation for 1,143 scholars—viz., senior mixed department, 388; junior mixed department, 388; infants department, 367. The school is arranged in a two-story building for mixed classes, and a separate building for infants. Each department has a central hall and classrooms. There are also lavatories, teachers'-rooms, store-rooms, etc., on the mezzanine floors. The buildings are heated by hot water and open fireplaces. The floors are fireproof, being constructed with concrete on steel girders. Each department has two entrances, and the senior mixed department has two staircases. Two cloakrooms are provided for each department. The external walls are built with stock bricks, and the roofs are covered with slates. The playgrounds are large, and will be paved with asphaltic tar, and have two covered shelters. A caretaker's house is provided. The contract price is 18,250*l*. Mr. W. Pywell is the architect.

SCHOOL, CARTER KNOWLE, SHEFFIELD.—A new school has been erected at the junction of Carter Knowle-road and Bannerdale-road for Sheffield Education Committee. The school will accommodate 300 infants, and 400 older boys and girls. It is arranged on the central hall principle. The hall measures 84 ft. by 30 ft., and is divided by sliding screens. Around it are twelve class-rooms, varying in size from 25 ft. by 24 ft. to 25 ft. by 22 ft. The whole of the buildings are heated with a low-pressure hot water apparatus. The site, being a sloping one, cookery and manual centres are provided on the low level, each department affording accommodation for upwards of forty pupils. All the classrooms are at least 14 ft. high, and an area of 10 superficial feet is allowed for each child. The total outlay on the school has been 15,220*l*. The site covers two acres (one of which is devoted to playgrounds), and there is space for the erection of another department in case of need. The building has been erected from the designs of Messrs. Holmes & Watson, architects, Sheffield.

SCHOOL, WEST CALDER, GLASGOW.—Gavieside School, which has been reconstructed and enlarged by the West Calder School Board, was opened on the 12th inst. The boys' and girls' entrances and five class-rooms, giving accommodation for about 280 scholars, are grouped round three sides of a central hall, and each apartment opens directly off it. Two teachers' rooms and the boys' and girls' cloak-rooms and lavatories form the remaining side of the hall, and look towards the front. The cost of the new work is about 1,750*l*., and the architect is Mr. William Baillie, Glasgow.

RAILWAY MISSION HALL, SALISBURY.—The foundation-stones of a new mission hall have just been laid in Devizes-road, Salisbury. The work is being carried out from designs prepared by Mr. A. C. Bothams, architect.

HOSPITAL EXTENSION, MANSFIELD.—The memorial-stones were recently laid of the extensions which are being made to the Mansfield Hospital. The scheme provides for a ward capable of containing twenty-six additional beds, as well as extra kitchen accommodation and rooms for the augmented staff. Mr. R. F. Vallance is the architect of the work, the estimated cost of which is 6,600*l*.

COUNTY MUSEUM, LINCOLN.—The conversion of the building known as the Grey Friary, at Lincoln, into a county museum has just been completed. The Grey Friary is a building of two stories, and forms a small portion of what was once a complete monastic establishment, erected in the first half of the XIIIth century. The architects who have been responsible for the conversion of the building (Messrs. Watkins & Son), in their report to the Corporation, state that the original roof still remains intact over the eastern end of the main building. It consists of trussed rafters, with semi-circular trusses to each pair. The rooms are well lighted and heated, and the structure well arranged for its purpose, while its ancient character has been preserved.

NEWPORT LUNATIC ASYLUM, CAERLEON, MON.—The new asylum for the county borough of Newport, situate at Caerleon, has just been opened. The buildings, with their equipment and furniture, will cost 116,000*l*., and roads and bridges represent about 6,000*l*. The laying-out of the grounds and fencing, architect's commission, clerk of the works' salary, legal costs, and miscellaneous expenditure not yet completed are estimated at 17,000*l*., bringing the total estimated expenditure to 155,000*l*. The accommodation provided is for 388 patients, with administration offices sufficient for 500 patients, thus enabling two further blocks of buildings for patients to be erected without requiring any addition to the administrative block. The architect for the buildings was Mr. A. J. Wood, of London, the contractors Messrs. John Linton & Co. (Limited), of Newport, and the clerk of works Mr. W. B. Partington. The Borough Engineer (Mr. R. H. Haynes) carried out the diversion of road and the construction of a new bridge over the Great Western Railway. The blocks for patients are two stories in height, those nearest the centre being allotted to sick and infirm cases, and consisting of a ward for 30 patients on each floor. The next block is designed for 35 epileptic and 35 quiet chronic cases, the epileptics being accommodated in a ward on the ground floor and the quiet chronics in a similar ward on the first floor. Next this is the recent and acute block, comprising a ward for 27 patients on either floor. The future extensions will consist of a block beyond the recent and acute on each side for working patients, that on the female side being contiguous to the laundry, and that on the male side adjacent to the workshops. The asylum is so designed that these additional blocks may be added without in any way disturbing the patients or interfering with the working of the institution. The official block is placed centrally to the south of the administrative offices. The great fall in the ground from back to front would not admit of this block being placed to the north, the position recommended by the Commissioners in Lunacy. It is a two-story building, containing on the ground floor committee room, receiving room, photographic studio, etc. The upper floor is allotted to the assistant medical officer and the matron, their quarters being quite separate and reached by different staircases. On the male side, in close proximity to the site for the future block for working patients, are the workshops. They comprise shops for shoemakers, tailors, upholsterers, carpenters, plumbers, painters and glaziers, bricklayers' shed, foreman's office, etc. The boiler-house block is placed to the east of the workshops, and contains, in addition to the boiler-house, coal stores, electric plant room, battery-room, pump-room, engineers' shop, office, etc. The blocks for attendants and nurses are placed in the usual position east and west of the administrative offices. They include the necessary mess and recreation rooms on the ground floor, the upper floor being allotted to night nurses and domestics on the female side and to night attendants on the male side. The buildings are lighted throughout by electricity, the current being generated in the institution. Electric fire-alarms, tell-tales, bells, and telephones are installed throughout the buildings. Fire-alarms are provided in each ward and section of the building. In addition to the two means of exit provided from each ward ample precautions have been taken in case of fire, both the interior and exterior of the building being commanded by hydrants of the latest type. The following detached buildings are provided in addition to the main asylum:—Chapel, mortuary, farm buildings, six cottages for staff, two entrance lodges, cottage for bailiff, and garden buildings.

WORKMEN'S INSTITUTE, YNYSHIR.—The new workmen's hall and institute at Ynyshir was opened on the 3rd inst. The building is of native stone and, in addition to the hall, contains a library, billiard-rooms (two tables), a committee-room, providing seating accommodation for 200 people, games rooms for boys, a gymnasium, and a large reading-room. The institute will be provided with its own electricity and gas. The electric plant was supplied by Messrs. Clay Bros., Cardiff; the suction gas plant by Messrs. William Grice & Co.; and the heating apparatus by Messrs. Stoll & Co., of Oldham. The contractor was Mr. David Richards, Ynyshir, and the architect Mr. E. Williams, Cardiff. The cost was 7,900*l*.

FREE LIBRARY, CHELMSFORD.—The Chelmsford Free Library and Reading Room, Museum, and School of Art were opened recently by Lady Rayleigh. The building consists of a central block, with two wings. On the ground floor are the entrance-hall, librarian's and curator's offices, the library and reading-room, and the museum and museum library. The school of art occupies the whole of the first floor, and above are a store-room and caretaker's apartments. The cost of the work, including the site, was about 8,000*l*. Mr. Cuthbert Brown is the Borough Surveyor.

PROPOSED HOSPITAL EXTENSION, MIDDLESBROUGH.—At a meeting of the council of the North Ormesby Hospital, Middlesbrough, on the 9th inst., Mr. J. M. Bottomley, architect, reported that the proposed addition, to be known as the Elizabeth Brown wing, would cost 6,000*l*., and the alterations to existing buildings he estimated would cost 1,375*l*. After some discussion it was decided to carry out the improvements, omitting the staircase and lift, with approaches, estimated at 500*l*., the amount to be expended thus being 6,875*l*.

LIBRARY, CARLTON.—A new free library was opened at Carlton on the 10th inst. The building contains a newspaper and magazine room, lending and reference departments, recreation-room, and librarian's-room. There is also lavatory accommodation. The exterior of the building is of red brick with Hollington stone dressings. The

not know what their experience in London was, but in the north the Act had proved to be the most prolific Act for litigation of any he knew, and it had been a gold mine to lawyers. The success of the Federation depended upon the associations, and he hoped they would all pull together in one direction. They should not let London or provincial jealousy spring up amongst them; unity was what they wanted. The Federation was doing its best to organise the various associations throughout the country, but there were numbers of large employers whom they could not draw into the fold, and it was a shame that these men should not help them, seeing that they benefited from the work of the Federation.

Mr. Howell J. Williams, L.C.C., then proposed "The Architects and Surveyors." The architectural profession was one of the most noble in the country. A good deal had been heard lately about Imperialists, but who were really the great empire-builders but the architects? What would London and other great cities be but for architects?—and yet how miserable were their rewards! In other professions, particularly the legal profession, there were great rewards for its followers, but these were wanting in the architectural profession because architects had their heart and soul in their work and had not taken that interest in the legislation of the Government to make it possible to secure those adequate rewards for their own profession. He advised architects to seek more seats in the House of Commons. He did not think there was any profession more harassed in this country at the present time that the architectural profession. They had to face Building Acts here, amendments, by-laws, sub-by-laws there, and such bodies as borough councils, guardians, etc., everywhere. As to the Building Act, he had repeatedly urged that what was wanted was not an amendment of the Act, but a codification of the Acts in such a form that one could easily know what was desired. Instead of that one had to turn to an amendment which referred to an amendment, which in turn referred to a previous amendment. He believed the London County Council tried to do what was right in the interests of London, but he urged upon them to remember that the people they should go to to assist them in any piece of legislation were those who knew most about the matter. Every town had a right to control the building work which went on around it, but a great deal depended on the way the control was exercised, and upon that sweet reasonableness in administration which was so necessary and yet so often absent. He believed in the *entente* in everything, even in the building trade. As to the attempt to Americanise the building trade of London, he warned everyone to discourage that system. What we wanted was the old system brought up-to-date; the architect to create, and the builder to carry out. As to the surveyors, it was a most unhappy state of affairs when there was no quantity surveyor on a large job. Litigation was avoided where a quantity surveyor was engaged, and the quantity surveyor, though a new institution, had come to stay. As to district surveyors, he was opposed to doing anything which would destroy the position and independence of the district surveyor, whatever else might be done by the London County Council in the matter. The independent district surveyor was really essential as a buffer between the architect and builder, and the unreasonable administration of Acts of Parliament. He hoped that no architect or surveyor would be party to such an outrage upon the public as was to be seen in Fleet-street where was being erected a building, the front of which was being treated with horrid plaques of colour; to prevent such an outrage, further powers should be granted even to the London County Council. As to the visit of the London County Council to Paris, what he had noticed was that in Paris art led the way before commerce, whereas in London, unfortunately, commerce came first and art afterwards. He was afraid that London would never be what Paris is, for difficulties were in the way, but with the rising generation of architects everything was possible—even a new London County Council hall.

Mr. W. E. Riley, who responded for the architects, said that it was remarkable that, while he was constantly meeting people who told him all about the canons of architecture, and where he was wrong, and all the details about it, they never heard a man tell his lawyer where the lawyer was wrong—if he did, he would have to pay for it. Architects and builders were supposed to be in opposite camps by those who did not know. There were fourteen builders in that room with whom he had had close relations in building work, and he had never had a quarrel with any one of them. Any feeling of opposition they had could be got rid of by the exercise of a little forbearance. In nearly every instance in which he had carried out contracts he had insisted on a good arbitration clause. He disliked to see in any specification the words: "Make all clean and perfect." It was a most foolish expression, and the man who put it in did not know what he wanted. It really meant that the builder must do what he had forgotten to tell him to do. As a rule they did not sufficiently appreciate the very great necessity there was for them to try and get more sympathy in the interpretation of what they wanted done by the builder. He had never seen a good design on paper which would not be seriously impaired by bad building, and he had never seen a bad design which was so bad on paper that it would not be materially improved and given character to by sound and good building, and in that lay what he called the true art of building. As to the recent depressed state of the building trade, he hoped things would soon brighten up.

Mr. G. Corderoy briefly replied for the surveyors.

The remaining toast was "Our Guests," suitably proposed by Mr. Alex. Ritchie, J.P., C.C., and acknowledged by Mr. G. Hubbard.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Fulham Borough Council 6,000*l.* for laying out cemetery, and 15,000*l.* for street improvement; Hackney Guardians 10,000*l.* for poor law purposes; Hammersmith Borough Council 15,210*l.* for electric lighting; Wandsworth Borough Council 5,850*l.* for street improvements; Woolwich Borough Council 10,000*l.* for baths and wash-houses, and 1,580*l.* for advances under the Small Dwellings Acquisition Act, 1899.

The Works Committee.—The Works Committee submitted statements of works completed during the half-year ended September 30, 1905. In statement I. are included the accounts for thirteen works, in respect of which complete specifications and bills of quantities have been prepared. The cost of two works has exceeded the final certificate; the net balance of cost below certificated value is 27,786*l.* 9s. 4d., or over 10 per cent. Statement I. showed that the total estimated cost of the thirteen works was 265,103*l.*, and that the actual cost was 237,317*l.* Statement III. shows the results of the execution of jobbing works during part of the year 1904-5 and of the year 1905-6. The cost of works executed in the year 1904-5, and not previously reported, is 15,474*l.* 15s., and the balance of cost below schedule value is 1,500*l.* 19s., or 9 per cent. The balance of cost below schedule value in the case of the works executed in 1905-6, and now reported, is 190*l.* 6s. 3d., or 8 per cent. In their general observations the committee state that: "The total cost of the works included in the statements now presented does not represent the turnover of the department, because much of the expenditure on these works occurred previous to the half-year in question, while, on the other hand, much of the expenditure during the six months was upon works which are still unfinished. The approximate expenditure on works executed by the department during the half-year was 305,000*l.* The expenditure in the previous half-year, reported by us on August 1, 1905, was 402,300*l.*, but this figure is hardly comparable, as all indirect charges, such as those for plant depreciation and general and establishment charges, are always brought into account in the second half of the financial year. The turnover for the financial year 1905-6 will probably exceed the turnover for the previous year. The number of estimated works referred to us for execution and not yet included in the half-yearly statements of completed works submitted to the Council is fifty-three (the several sections of Aldwych and Kingsway being regarded as one work), representing an estimated expenditure of approximately 1,442,000*l.*" They recommended: "That the excess, amounting to 148*l.* 13s. 10d. and 589*l.* 14s. 11d., of actual cost over final certificate in respect of the erection of workshops at Shoreditch Technical Institute and the enlargement of Windsor-road school respectively, be approved."

In answer to a question, Mr. Torrance, chairman of the committee, said that the committee did not want to be put in competition with the contractor.

Mr. E. Collins said that had the work been put out to tender large sums of money might have been saved.

Mr. R. A. Robinson said that there were many responsible contractors who could do the work more cheaply than the Works Committee. That had been proved over and over again. The committee took its work in an exclusive way. When the Works Department was first started they were told that the work would be done 10 per cent. cheaper than if let to contractors; but not only did the committee fail to do that, but it did the work at a greater cost.

Mr. Ward controverted these statements, and said that by the present system the responsible officers would always be able to make a close estimate of the probable cost of work.

The recommendation was then carried.

Rating of Site Values.—The following recommendation of the Local Government, Records and Museums Committee was agreed to:—"That a petition be presented to the House of Commons praying that a Bill may be introduced by His Majesty's Government to provide for the separate assessment and rating of site values; that the Parliamentary Committee do prepare such petition; and that the seal of the Council be affixed to the petition when ready."

Mr. H. P. Harris said the Government programme had been announced in the King's Speech, which contained nothing about a Site Values Bill, and, as many of the subjects mentioned in that speech would not be carried into law, it was hopeless to expect that any measure would be carried which was not there mentioned. The rates would not be relieved by the Equalisation of Rates Bill, which would only redistribute the pressure, neither would a Site Values Bill reduce the burden. That burden would, however, be relieved if the Government would carry out the recommendations of the Royal Commission, and he therefore moved that the report be referred back, with an instruction to the committee to approach the Government on the lines which he had suggested.

On a division, the amendment was rejected by fifty-three votes to twenty-five. The recommendation of the committee was thereupon adopted.

Cost of Erection of Schools.—The Education Committee reported as follows:—

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We then recommended that estimates in respect of the preparation of working drawings, etc., which had been submitted by the Finance Committee in respect of these schools should be approved. The Council, after some discussion, postponed the consideration of this recommendation, our chairman undertaking that an inquiry should be made into the cost of erecting public elementary schools with a view to ascertaining whether it would be possible

to effect any economies in the matter of school building.

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In the course of the inquiry it was ascertained that it was cheaper to build a school in two separate blocks, consisting of a two-floor building for the graded school and a one-floor building for the infants' department, than in a single block of three or four floors. This was accounted for by the fact that, although, in the case of a three-story building there is a saving in having to provide one roof only instead of two, this saving is more than counterbalanced by the additional cost of the greater thickness of brickwork required for the walls, the extra cost of the scaffolding to the upper floors, and the cost of hoisting joists and girders to a great height, etc. In planning new London County Council elementary schools, this practice is adopted wherever the site is of sufficient size for the purpose.

As regards the question of the estimated cost of the buildings referred to above, it should be pointed out that the three new schools (i.) (ii.) and (iii.) have been planned for future enlargement (the accommodation of the complete school being given below), and provision is made in the preliminary plans and estimates now under consideration for the building of halls of sufficient size for the schools when enlarged, it being impossible to enlarge the halls after they have been erected and the building planned for the specified accommodation. The cost for the Lawn-lane school also includes a provision for the erection, with the first portion of the school, of the cloak-rooms, lavatories, and teachers' rooms required for the complete school; in the plans of the Fountain-road school, additional staircases for the complete school are included for boys and girls, and in the case of the infants' school, additional cloakrooms, lavatories, etc. As regards the Franciscan-road school, the cloakrooms and lavatories for the complete school are included in the plans and estimates. This provision for future requirements, while it adds to the initial cost, is really a considerable saving to the Council, as when the additional class-rooms are erected the cost is about 7*l.* 10s. a place. The architect's (Education) estimates for the cost of buildings only in each case, calculated on the accommodation of the complete school, are as follows :—

Name of School. (1)	Area of Site. Square feet. (2)	Accommodation of Completed School. (3)	Estimated Cost of School Building Only. (4)	Estimated Cost a Place. (5)	Total Estimated Cost including Furniture, Possible Extras, etc. (6)	Total Estimated Cost a Place. (7)
			£ s. d.	£ s. d.	£ s. d.	£ s. d.
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(ii.) Fountain-road	86,900	1,140	17,205 0 0	15 1 11	27,347 0 0	23 19 9
(iii.) Franciscan-road	76,200	1,124	14,658 0 0	13 0 9	23,511 0 0	20 18 4

In this connexion we have had before us a letter from the Board of Education (November 29, 1905) drawing attention to the high estimated cost of certain schools, the preliminary plans of which have recently been submitted to them for approval. The Board state that the average cost per head in five instances works out at nearly 20*l.* per head for the schools when completed for the full numbers proposed; that there is nothing in the plans as to which they would raise any question, except in regard to the provision of special rooms for instruction in science and drawing; and inquire whether the Council cannot secure that the charge per place for the erection of new schools can be reduced. The Board add that they recognise that the cost of building in and near London is distinctly higher than it is in many other parts of the country, yet they find that even close to London satisfactory schools can be built at a cost per scholar materially lower than that proposed to be incurred in the case of the schools, plans of which have recently been submitted to them.

We have given careful consideration to this matter on several occasions, and have been in communication with the Board of Education with a view to obtaining further particulars of some of the cheaper schools erected by education authorities whose districts are contiguous to London. The Board, however, did not see their way to furnish the Council with these particulars, but suggested that if inquiry were made of the authorities in question no doubt they would be willing to supply the information necessary to assist the Council in its inquiry. Acting upon this suggestion we have communicated with the undermentioned authorities asking them whether they would be good enough to furnish particulars as to the cost and accommodation of any school recently erected under their jurisdiction, and to lend the Council the plans and specification of any such school—Boroughs of Wimbledon, Hornsey, and East Ham, County Councils of Middlesex, Surrey, and Kent, County Borough of West Ham, Urban District Councils of Chiswick and Willesden.

This information will give a basis for a fuller investigation of the question, and, although at the moment we are convinced that the Council should proceed upon the lines at present laid down, the Council may be assured that the question will continue to engage our serious attention, and that we will not fail at once to recommend any possible changes in the direction of economy. . . ."

The committee recommended that working drawings, etc., be prepared.

Mr. McKinnon Wood, M.P., moved that the matter be referred back with a view to getting more information. In his opinion, the cost appeared to be excessive.

Sir Melville Beachcroft seconded.

Canon Jephson explained that one reason why the cost in London was so high was that the Council jobs had been carried out in cement and the school at Croydon was built with mortar. He had visited schools in Switzerland, France, and America, and he believed that the elementary school buildings in London were the best. Whether they were too expensive was a matter for the Council; but he earnestly hoped that these schools would be built, for they were absolutely necessary.

Mr. Stephen Collins, M.P., said that the difference between building in mortar and cement would not come to more than 10s. per place. The great difference between the cost per place needed a much more satisfactory explanation.

In the course of subsequent discussion, Mr. Saunders said that if the Council wanted decent buildings, which would not spoil the neighbourhood and which would be carried out in a sanitary manner, they must not think of erecting them more cheaply. It was not right that for the sake of a few pounds the architectural appearance of our schools should be spoilt.

The amendment was carried on a division by sixty-eight to fifty-one.

Theatre, etc., Works.—Sanction was given to the following works :—

Æolian Hall.—Gallery at the north end of the hall (Mr. W. Cave).

His Majesty's Theatre.—Exits from orchestra, etc. (Messrs. Romaine-Walker & Besant).

Holborn Empire.—Gates across the open passageway from the Holborn Empire into Whetstone Park (Messrs. F. Matcham & Co.).

Royal Victor Hotel.—Alterations in connexion with exits (Mr. E. Stephens).

Payment of District Surveyors by Salaries.—The Building Act Committee again reported as to the future payment of District Surveyors by salaries instead of fees. They stated that they had carefully reconsidered their proposals* in the light of the criticism to which they had been subjected, and they desired to draw the attention of the Council to the undermentioned points in connexion therewith :—

"(1) It was not at any time our intention to ask the Council to do more than approve the general principle of the 'model' scheme, and we now propose to so frame our recommendation as to make it quite clear that the details of our proposals as regards the rearrangement of districts and the appointment of, and salaries to be paid to, new district surveyors will be submitted to the Council for its approval in each case.

(2) We are advised that payment by salaries, as proposed, will not lessen the responsibility of district surveyors under the London Building Acts or affect their status in any way.

(3) Whether the Council decides to pay district surveyors by salaries or not, the prohibition of private practice makes it necessary to rearrange districts so as to provide in every case an income sufficient to attract competent candidates for the office of district surveyor, and in this connexion it should be noted that the order of reference to the Building Act Committee [paragraph A 21 (1)] provides that the districts are to be rearranged by the Committee as opportunities occur, so that the average of the fees received may in no case amount to less than 500*l.* per annum.

(4) Delay in introducing payment by salaries will, so far as can be seen, result in increased cost, and we are supported in this opinion by the fact that, while in 1890 the cost would have been 40,638*l.*, the cost had risen in 1905 to 50,748*l.*

(5) There are now eight districts vacant, two districts where the district surveyors are not acting owing to ill-health (one is mentally weak) and six districts where the surveyors are over seventy years of age, so that the present time is an exceptionally favourable one for the introduction of a new system of payment.

Having regard to the near approach of the next financial year and the obvious advantage of any system of payment by salaries commencing at the beginning of the financial year, we are of opinion that the matter should be dealt with at the earliest possible moment, and with a view to members of the Council having before them all possible information on the subject we have given instructions for a copy of a memorandum, prepared by our chairman, answering in detail the various criticisms made with regard to our proposals, to be sent to each member of the Council.

We understand that the Finance Committee are prepared to report on the proposals, and we recommend :—

(*a*) That as from and including April 1, 1906, all district surveyors be paid a fixed salary by way of remuneration instead of fees; that the amount of salary to be paid to each of the present district surveyors be equal to the amount of the average of the fees received in his districts during the seven years ended December 31, 1905, as provided in sect. 158 of the London Building Act, 1894; and that the Building Act Committee do submit the necessary recommendations to give effect to this decision.

(*b*) That with regard to the existing and all future vacancies the Building Act Committee do submit to the Council such recommendations, giving full particulars of their proposals in every case, as will be in general accord with the 'model' scheme described in the report of the Building Act Committee, dated February 12, 1906."

The report of the Finance Committee was practically the same as their previous report, printed in our issue for February 3.

The consideration of the matter was adjourned.

White Hart-lane Estate—Erection of Cottages on the Tower-gardens Section.—The Housing of the Working Classes Committee recommended, and it was agreed :—

"That the tender of Mr. G. E. Pulford for the erection of twenty-nine first-class cottages, eight second-class cottages, and twenty-three third-class cottages for the sum of 11,415*l.*, and the tender of Mr. G. D. Barns for the erection of three first-class cottages, thirty-six second-class cottages, and twenty-three third-class cottages for the sum of 10,855*l.* on the first part of the Tower-gardens section of the White Hart-lane estate be accepted; that payments to the extent of 80 per cent. of the work done be made to Mr. Pulford and Mr. Barns in fortnightly instalments upon the architect's certificate, that a further 15 per cent. of the value be paid on the completion of each cottage, and that the remaining 5 per cent. be paid within one month after the completion of each cottage."

The Council adjourned at half-past seven o'clock.

* See our issue for December 16, 1905.

APPLICATIONS UNDER THE 1894 BUILDING ACT.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses :—

Lines of Frontage and Projections.

Islington, East.†—The retention of an addition in front of No. 198, Essex-road, Islington (Mr. W. H. Winder for Mr. T. Singlehurst).—Consent.

Strand.—Projecting balconies at Nos. 93 and 94, Long-acre, Strand, abutting upon Wilson-street (Messrs. F. Chambers & Son for Messrs. Odhams, Limited).—Consent.

Brixton.—A deviation from the plan approved for the erection of blocks of buildings on a site on the north-west side of Coldharbour-lane, Brixton, abutting also upon Lilford-road and Kenbury-street, so far as relates to an increase in the height of the buildings next Coldharbour-lane (Mr. E. E. Bird).—Consent.

Marylebone, West.—Buildings on the north-east side of Maida-vale, St. Marylebone, to abut upon Maida-vale and St. John's-wood-road (Mr. V. S. Galsworthy for the Governors of Harrow School).—Refused.

Paddington, North.†—One-story shops in front of Nos. 431 and 433, Edgware-road, Paddington (Messrs. Gardiner & Theobald for Messrs. Matthews & Sons, Limited).—Refused.

Paddington, North.†—One-story shops in front of Nos. 435 and 437, Edgware-road, Paddington (Messrs. Gardiner & Theobald for Meux's Brewery Company, Limited).—Refused.

Paddington, North.†—One story shops in front of Nos. 439 to 451 (odd numbers only), Edgware-road, Paddington, to abut also upon Maida-hill

not know what their experience in London was, but in the north the Act had proved to be the most prolific Act for litigation of any he knew, and it had been a gold mine to lawyers. The success of the Federation depended upon the associations, and he hoped they would all pull together in one direction. They should not let London or provincial jealousy spring up amongst them; unity was what they wanted. The Federation was doing its best to organise the various associations throughout the country, but there were numbers of large employers whom they could not draw into the fold, and it was a shame that these men should not help them, seeing that they benefited from the work of the Federation.

Mr. Howell J. Williams, L.C.C., then proposed "The Architects and Surveyors." The architectural profession was one of the most noble in the country. A good deal had been heard lately about Imperialists, but who were really the great empire-builders but the architects? What would London and other great cities be but for architects?—and yet how miserable were their rewards! In other professions, particularly the legal profession, there were great rewards for its followers, but these were wanting in the architectural profession because architects had their heart and soul in their work and had not taken that interest in the legislation of the Government to make it possible to secure those adequate rewards for their own profession. He advised architects to seek more seats in the House of Commons. He did not think there was any profession more harassed in this country at the present time that the architectural profession. They had to face Building Acts here, amendments, by-laws, sub-by-laws there, and such bodies as borough councils, guardians, etc., everywhere. As to the Building Act, he had repeatedly urged that what was wanted was not an amendment of the Act, but a codification of the Acts in such a form that one could easily know what was desired. Instead of that one had to turn to an amendment which referred to an amendment, which in turn referred to a previous amendment. He believed the London County Council tried to do what was right in the interests of London, but he urged upon them to remember that the people they should go to to assist them in any piece of legislation were those who knew most about the matter. Every town had a right to control the building work which went on around it, but a great deal depended on the way the control was exercised, and upon that sweet reasonableness in administration which was so necessary and yet so often absent. He believed in the *entente* in everything, even in the building trade. As to the attempt to Americanise the building trade of London, he warned everyone to discourage that system. What we wanted was the old system brought up-to-date; the architect to create, and the builder to carry out. As to the surveyors, it was a most unhappy state of affairs when there was no quantity surveyor on a large job. Litigation was avoided where a quantity surveyor was engaged, and the quantity surveyor, though a new institution, had come to stay. As to district surveyors, he was opposed to doing anything which would destroy the position and independence of the district surveyor, whatever else might be done by the London County Council in the matter. The independent district surveyor was really essential as a buffer between the architect and builder, and the unreasonable administration of Acts of Parliament. He hoped that no architect or surveyor would be party to such an outrage upon the public as was to be seen in Fleet-street where was being erected a building, the front of which was being treated with horrid plaques of colour; to prevent such an outrage, further powers should be granted even to the London County Council. As to the visit of the London County Council to Paris, what he had noticed was that in Paris art led the way before commerce, whereas in London, unfortunately, commerce came first and art afterwards. He was afraid that London would never be what Paris is, for difficulties were in the way, but with the rising generation of architects everything was possible—even a new London County Council hall.

Mr. W. E. Riley, who responded for the architects, said that it was remarkable that, while he was constantly meeting people who told him all about the canons of architecture, and where he was wrong, and all the details about it, they never heard a man tell his lawyer where the lawyer was wrong—if he did, he would have to pay for it. Architects and builders were supposed to be in opposite camps by those who did not know. There were fourteen builders in that room with whom he had had close relations in building work, and he had never had a quarrel with any one of them. Any feeling of opposition they had could be got rid of by the exercise of a little forbearance. In nearly every instance in which he had carried out contracts he had insisted on a good arbitration clause. He disliked to see in any specification the words: "Make all clean and perfect." It was a most foolish expression, and the man who put it in did not know what he wanted. It really meant that the builder must do what he had forgotten to tell him to do. As a rule they did not sufficiently appreciate the very great necessity there was for them to try and get more sympathy in the interpretation of what they wanted done by the builder. He had never seen a good design on paper which would not be seriously impaired by bad building, and he had never seen a bad design which was so bad on paper that it would not be materially improved and given character to by sound and good building, and in that lay what he called the true art of building. As to the recent depressed state of the building trade, he hoped things would soon brighten up.

Mr. G. Corderoy briefly replied for the surveyors.

The remaining toast was "Our Guests," suitably proposed by Mr. Alex. Ritchie, J.P., C.C., and acknowledged by Mr. G. Hubbard.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Fulham Borough Council 6,000*l.* for laying out cemetery, and 15,000*l.* for street improvement; Hackney Guardians 10,000*l.* for poor law purposes; Hammersmith Borough Council 15,210*l.* for electric lighting; Wandsworth Borough Council 5,850*l.* for street improvements; Woolwich Borough Council 10,000*l.* for baths and wash-houses, and 1,580*l.* for advances under the Small Dwellings Acquisition Act, 1899.

The Works Committee.—The Works Committee submitted statements of works completed during the half-year ended September 30, 1905. In statement I. are included the accounts for thirteen works, in respect of which complete specifications and bills of quantities have been prepared. The cost of two works has exceeded the final certificate; the net balance of cost below certificated value is 27,786*l.* 9s. 4d., or over 10 per cent. Statement I. showed that the total estimated cost of the thirteen works was 265,103*l.*, and that the actual cost was 237,317*l.* Statement III. shows the results of the execution of jobbing works during part of the year 1904-5 and of the year 1905-6. The cost of works executed in the year 1904-5, and not previously reported, is 15,474*l.* 15s., and the balance of cost below schedule value is 1,500*l.* 19s., or 9 per cent. The balance of cost below schedule value in the case of the works executed in 1905-6, and now reported, is 190*l.* 6s. 3d., or 8 per cent. In their general observations the committee state that: "The total cost of the works included in the statements now presented does not represent the turnover of the department, because much of the expenditure on these works occurred previous to the half-year in question, while, on the other hand, much of the expenditure during the six months was upon works which are still unfinished. The approximate expenditure on works executed by the department during the half-year was 305,000*l.* The expenditure in the previous half-year, reported by us on August 1, 1905, was 402,300*l.*, but this figure is hardly comparable, as all indirect charges, such as those for plant depreciation and general and establishment charges, are always brought into account in the second half of the financial year. The turnover for the financial year 1905-6 will probably exceed the turnover for the previous year. The number of estimated works referred to us for execution and not yet included in the half-yearly statements of completed works submitted to the Council is fifty-three (the several sections of Aldwych and Kingsway being regarded as one work), representing an estimated expenditure of approximately 1,442,000*l.*" They recommended: "That the excess, amounting to 148*l.* 13s. 10d. and 589*l.* 14s. 11d., of actual cost over final certificate in respect of the erection of workshops at Shoreditch Technical Institute and the enlargement of Windsor-road school respectively, be approved."

In answer to a question, Mr. Torrance, chairman of the committee, said that the committee did not want to be put in competition with the contractor.

Mr. E. Collins said that had the work been put out to tender large sums of money might have been saved.

Mr. R. A. Robinson said that there were many responsible contractors who could do the work more cheaply than the Works Committee. That had been proved over and over again. The committee took its work in an exclusive way. When the Works Department was first started they were told that the work would be done 10 per cent. cheaper than if let to contractors; but not only did the committee fail to do that, but it did the work at a greater cost.

Mr. Ward controverted these statements, and said that by the present system the responsible officers would always be able to make a close estimate of the probable cost of work.

The recommendation was then carried.

Rating of Site Values.—The following recommendation of the Local Government, Records and Museums Committee was agreed to:—"That a petition be presented to the House of Commons praying that a Bill may be introduced by His Majesty's Government to provide for the separate assessment and rating of site values; that the Parliamentary Committee do prepare such petition; and that the seal of the Council be affixed to the petition when ready."

Mr. H. P. Harris said the Government programme had been announced in the King's Speech, which contained nothing about a Site Values Bill, and, as many of the subjects mentioned in that speech would not be carried into law, it was hopeless to expect that any measure would be carried which was not there mentioned. The rates would not be relieved by the Equalisation of Rates Bill, which would only redistribute the pressure, neither would a Site Values Bill reduce the burden. That burden would, however, be relieved if the Government would carry out the recommendations of the Royal Commission, and he therefore moved that the report be referred back, with an instruction to the committee to approach the Government on the lines which he had suggested.

On a division, the amendment was rejected by fifty-three votes to twenty-five. The recommendation of the committee was thereupon adopted.

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"We submitted on December 5, 1905, a report with reference to the preliminary plans of the schools proposed to be erected on the undermentioned sites:—

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In order that a comparison might be made between two schools, where the conditions of planning, etc., were as nearly as possible identical, the Invicta-road school, Westcombe-park (Greenwich), was taken as corresponding fairly in general arrangement and size with that of the Portland-road school, Croydon. The Portland-road school, which was erected in 1902, accommodates 1,310 children, the cost of which the chairman of the Croydon School Board was reported to have stated to be 13*l.* 11s. 8d. a place. The Invicta-road school, which was built in 1898, has 965 places, and cost 20*l.* 7s. 4d. a place. The graded portion of both schools consists of a two-story building, the infants being accommodated in a separate one-story building. A comparison was made, item by item, of the various branches of the work done at these schools, and a very full examination was made of materials, quantities, and prices. The sub-committee which then reported arrived at the conclusion that the facts before them showed "that, having regard to the accommodation provided and the character of that accommodation, and the conditions under which the London School Board are required to work, the London Board have had their work done quite as cheaply at Invicta-road as the Croydon Board at their Portland-road school."

In the course of the inquiry it was ascertained that it was cheaper to build a school in two separate blocks, consisting of a two-floor building for the graded school and a one-floor building for the infants' department, than in a single block of three or four floors. This was accounted for by the fact that, although, in the case of a three-story building there is a saving in having to provide one roof only instead of two, this saving is more than counterbalanced by the additional cost of the greater thickness of brickwork required for the walls, the extra cost of the scaffolding to the upper floors, and the cost of hoisting joists and girders to a great height, etc. In planning new London County Council elementary schools, this practice is adopted wherever the site is of sufficient size for the purpose.

As regards the question of the estimated cost of the buildings referred to above, it should be pointed out that the three new schools (i.) (ii.) and (iii.) have been planned for future enlargement (the accommodation of the complete school being given below), and provision is made in the preliminary plans and estimates now under consideration for the building of halls of sufficient size for the schools when enlarged, it being impossible to enlarge the halls after they have been erected and the building planned for the specified accommodation. The cost for the Lawn-lane school also includes a provision for the erection, with the first portion of the school, of the cloak-rooms, lavatories, and teachers' rooms required for the complete school; in the plans of the Fountain-road school, additional staircases for the complete school are included for boys and girls, and in the case of the infants' school, additional cloakrooms, lavatories, etc. As regards the Franciscan-road school, the cloakrooms and lavatories for the complete school are included in the plans and estimates. This provision for future requirements, while it adds to the initial cost, is really a considerable saving to the Council, as when the additional class-rooms are erected the cost is about 7*l.* 10s. a place. The architect's (Education) estimates for the cost of buildings only in each case, calculated on the accommodation of the complete school, are as follows :—

Name of School. (1)	Area of Site. Square feet. (2)	Accommodation of Completed School. (3)	Estimated Cost of School Building Only. (4)	Estimated Cost a Place. (5)	Total Estimated Cost including Furniture, Possible Extras, etc. (6)	Total Estimated Cost a Place. (7)
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(ii.) Fountain-road	86,900	1,140	17,205 0 0	15 1 11	27,347 0 0	23 19 9
(iii.) Franciscan-road	76,200	1,124	14,658 0 0	13 0 9	23,511 0 0	20 18 4

In this connexion we have had before us a letter from the Board of Education (November 29, 1905) drawing attention to the high estimated cost of certain schools, the preliminary plans of which have recently been submitted to them for approval. The Board state that the average cost per head in five instances works out at nearly 20*l.* per head for the schools when completed for the full numbers proposed; that there is nothing in the plans as to which they would raise any question, except in regard to the provision of special rooms for instruction in science and drawing; and inquire whether the Council cannot secure that the charge per place for the erection of new schools can be reduced. The Board add that they recognise that the cost of building in and near London is distinctly higher than it is in many other parts of the country, yet they find that even close to London satisfactory schools can be built at a cost per scholar materially lower than that proposed to be incurred in the case of the schools, plans of which have recently been submitted to them.

We have given careful consideration to this matter on several occasions, and have been in communication with the Board of Education with a view to obtaining further particulars of some of the cheaper schools erected by education authorities whose districts are contiguous to London. The Board, however, did not see their way to furnish the Council with these particulars, but suggested that if inquiry were made of the authorities in question no doubt they would be willing to supply the information necessary to assist the Council in its inquiry. Acting upon this suggestion we have communicated with the undermentioned authorities asking them whether they would be good enough to furnish particulars as to the cost and accommodation of any school recently erected under their jurisdiction, and to lend the Council the plans and specification of any such school—Boroughs of Wimbledon, Hornsey, and East Ham, County Councils of Middlesex, Surrey, and Kent, County Borough of West Ham, Urban District Councils of Chiswick and Willesden.

This information will give a basis for a fuller investigation of the question, and, although at the moment we are convinced that the Council should proceed upon the lines at present laid down, the Council may be assured that the question will continue to engage our serious attention, and that we will not fail at once to recommend any possible changes in the direction of economy. . . ."

The committee recommended that working drawings, etc., be prepared.

Mr. McKinnon Wood, M.P., moved that the matter be referred back with a view to getting more information. In his opinion, the cost appeared to be excessive.

Sir Melville Beachcroft seconded.

Canon Jephson explained that one reason why the cost in London was so high was that the Council jobs had been carried out in cement and the school at Croydon was built with mortar. He had visited schools in Switzerland, France, and America, and he believed that the elementary school buildings in London were the best. Whether they were too expensive was a matter for the Council; but he earnestly hoped that these schools would be built, for they were absolutely necessary.

Mr. Stephen Collins, M.P., said that the difference between building in mortar and cement would not come to more than 10s. per place. The great difference between the cost per place needed a much more satisfactory explanation.

In the course of subsequent discussion, Mr. Saunders said that if the Council wanted decent buildings, which would not spoil the neighbourhood and which would be carried out in a sanitary manner, they must not think of erecting them more cheaply. It was not right that for the sake of a few pounds the architectural appearance of our schools should be spoilt.

The amendment was carried on a division by sixty-eight to fifty-one.

Theatre, etc., Works.—Sanction was given to the following works :—

Æolian Hall.—Gallery at the north end of the hall (Mr. W. Cave).

His Majesty's Theatre.—Exits from orchestra, etc. (Messrs. Romaine-Walker & Besant).

Holborn Empire.—Gates across the open passage-way from the Holborn Empire into Whetstone Park (Messrs. F. Matcham & Co.).

Royal Victor Hotel.—Alterations in connexion with exits (Mr. E. Stephens).

Payment of District Surveyors by Salaries.—The Building Act Committee again reported as to the future payment of District Surveyors by salaries instead of fees. They stated that they had carefully reconsidered their proposals* in the light of the criticism to which they had been subjected, and they desired to draw the attention of the Council to the undermentioned points in connexion therewith :—

"(1) It was not at any time our intention to ask the Council to do more than approve the general principle of the 'model' scheme, and we now propose to so frame our recommendation as to make it quite clear that the details of our proposals as regards the rearrangement of districts and the appointment of, and salaries to be paid to, new district surveyors will be submitted to the Council for its approval in each case.

(2) We are advised that payment by salaries, as proposed, will not lessen the responsibility of district surveyors under the London Building Acts or affect their status in any way.

(3) Whether the Council decides to pay district surveyors by salaries or not, the prohibition of private practice makes it necessary to rearrange districts so as to provide in every case an income sufficient to attract competent candidates for the office of district surveyor, and in this connexion it should be noted that the order of reference to the Building Act Committee [paragraph A 21 (1)] provides that the districts are to be rearranged by the Committee as opportunities occur, so that the average of the fees received may in no case amount to less than 500*l.* per annum.

(4) Delay in introducing payment by salaries will, so far as can be seen, result in increased cost, and we are supported in this opinion by the fact that, while in 1890 the cost would have been 40,638*l.*, the cost had risen in 1905 to 50,748*l.*

(5) There are now eight districts vacant, two districts where the district surveyors are not acting owing to ill-health (one is mentally weak) and six districts where the surveyors are over seventy years of age, so that the present time is an exceptionally favourable one for the introduction of a new system of payment.

Having regard to the near approach of the next financial year and the obvious advantage of any system of payment by salaries commencing at the beginning of the financial year, we are of opinion that the matter should be dealt with at the earliest possible moment, and with a view to members of the Council having before them all possible information on the subject we have given instructions for a copy of a memorandum, prepared by our chairman, answering in detail the various criticisms made with regard to our proposals, to be sent to each member of the Council.

We understand that the Finance Committee are prepared to report on the proposals, and we recommend :—

(*a*) That as from and including April 1, 1906, all district surveyors be paid a fixed salary by way of remuneration instead of fees; that the amount of salary to be paid to each of the present district surveyors be equal to the amount of the average of the fees received in his districts during the seven years ended December 31, 1905, as provided in sect. 158 of the London Building Act, 1894; and that the Building Act Committee do submit the necessary recommendations to give effect to this decision.

(*b*) That with regard to the existing and all future vacancies the Building Act Committee do submit to the Council such recommendations, giving full particulars of their proposals in every case, as will be in general accord with the 'model' scheme described in the report of the Building Act Committee, dated February 12, 1906."

The report of the Finance Committee was practically the same as their previous report, printed in our issue for February 3.

The consideration of the matter was adjourned.

White Hart-lane Estate—Erection of Cottages on the Tower-gardens Section.—The Housing of the Working Classes Committee recommended, and it was agreed :—

"That the tender of Mr. G. E. Pulford for the erection of twenty-nine first-class cottages, eight second-class cottages, and twenty-three third-class cottages for the sum of 11,415*l.*, and the tender of Mr. G. D. Barns for the erection of three first-class cottages, thirty-six second-class cottages, and twenty-three third-class cottages for the sum of 10,855*l.*, on the first part of the Tower-gardens section of the White Hart-lane estate be accepted; that payments to the extent of 80 per cent. of the work done be made to Mr. Pulford and Mr. Barns in fortnightly instalments upon the architect's certificate, that a further 15 per cent. of the value be paid on the completion of each cottage, and that the remaining 5 per cent. be paid within one month after the completion of each cottage."

The Council adjourned at half-past seven o'clock.

* See our issue for December 16, 1905.

APPLICATIONS UNDER THE 1894 BUILDING ACT.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses :—

Lines of Frontage and Projections.

Islington, East.†—The retention of an addition in front of No. 198, Essex-road, Islington (Mr. W. H. Winder for Mr. T. Singlehurst).—Consent.

Strand.—Projecting balconies at Nos. 93 and 94, Long-acre, Strand, abutting upon Wilson-street (Messrs. F. Chambers & Son for Messrs. Odhams, Limited).—Consent.

Brixton.—A deviation from the plan approved for the erection of blocks of buildings on a site on the north-west side of Coldharbour-lane, Brixton, abutting also upon Lilford-road and Kenbury-street, so far as relates to an increase in the height of the buildings next Coldharbour-lane (Mr. E. E. Bird).—Consent.

Marylebone, West.—Buildings on the north-east side of Maida-vale, St. Marylebone, to abut upon Maida-vale and St. John's-wood-road (Mr. V. S. Galsworthy for the Governors of Harrow School).—Refused.

Paddington, North.†—One-story shops in front of Nos. 431 and 433, Edgware-road, Paddington (Messrs. Gardiner & Theobald for Messrs. Matthews & Sons, Limited).—Refused.

Paddington, North.†—One-story shops in front of Nos. 435 and 437, Edgware-road, Paddington (Messrs. Gardiner & Theobald for Meux's Brewery Company, Limited).—Refused.

Paddington, North.†—One story shops in front of Nos. 439 to 451 (odd numbers only), Edgware-road, Paddington, to abut also upon Maida-hill

West (Messrs. Boehmer [&] Gibbs] for Mr. W. Hirsch).—Refused.

Width of Way.

Greenwich.—For the retention of buildings between Nos. 7 and 9, Coldbath-street, Greenwich, with a forecourt fence at less than the prescribed distance from the centre of the roadway of such street (Messrs. Cooper & Goulding).—Consent.

Bethnal-green, North-East.—Buildings on the north-east side of Wharf-road, Bethnal-green, with external walls at less than the prescribed distance from the centre of the roadway of such street, as shown on the plan (Messrs. M. W. King & Son).—Consent.

Width of Way and Working-Class Dwellings.

Holborn.—Deviation from the plans approved for the erection of dwelling-houses to be inhabited by persons of the working-class, on a site abutting upon Leather-lane, Portpool-lane, Verulam-street, and Baldwin's-place, Holborn (Mr. R. Robertson for the Housing of the Working Classes Committee of the Council).—Consent.

Formation of Streets.

Wandsworth.—That an order be issued to Mr. E. B. I'Anson, sanctioning the formation or laying-out of new streets for carriage traffic on the Mortimer estate, Streatham High-road, Streatham (for Mrs. Mortimer).—Consent.

Norwood.†—That an order be issued to Mr. C. Death sanctioning the formation or laying-out of a new street for carriage traffic to lead from Trinity-road to Norwood-road, Lambeth.—Consent.

Lewisham.—That an order be issued to Mr. W. Wilkinson sanctioning the formation or laying-out of a new street for carriage traffic in continuation northward of Oaksford-avenue, Wells-road, Sydenham (Mr. T. Covell).—Consent.

Hammersmith.†—That an order be issued to Messrs. H. Macintosh & R. J. W. Newman refusing to sanction the formation or laying-out for foot traffic only of streets to lead from Uxbridge-road to Bulwer-street, Shepherd's-bush, and the erection of a building in connexion therewith.—Refused.

The recommendations marked † are contrary to the views of the local authorities.

ARCHITECTURAL SOCIETIES.

LIVERPOOL ARCHITECTURAL SOCIETY.—This Society held an adjourned meeting at its rooms, Harrington-street, on the 19th inst., when the discussion was resumed on the paper by Mr. T. T. Rees on "Architects and City Improvement."* Mr. S. P. Morter presided. Mr. T. Myddelton Shallcross opened the discussion and criticised the various sections of the paper in detail. He dealt at length with streets, buildings, and open spaces, and suggested that prizes might be offered for the best suggestion of improving Liverpool in its future expansion. With regard to street advertisements, Mr. Shallcross said there seemed a need for the fixing of some standard to be attained by advertisers in their own interests and those of the general community. He suggested improvements to the city might be effected by the remission of some portion of the rates to those who voluntarily gave to the community such benefits as air spaces and ornamental trees, and so on, or to the householder who took steps to lessen the smoke nuisance. Mr. Hastwell Grayson followed, and advocated the establishment of a movement on the lines of the Cockburn Society of Edinburgh. This Society did much good work in Edinburgh on the lines aimed at by those who wished to see the city beautified. For instance, when an insurance society desired to raise a building of red brick, the Society, by influencing public opinion, obtained the substitution of stone for brick, Edinburgh being essentially a stone city. Objectionable advertisements were also dealt with in the same way, and Mr. Grayson suggested that an organisation working in similar fashion in Liverpool would achieve beneficial results.—An interesting discussion took place, during which speeches were made by Mr. Rathbone, Professor Reilly, Mr. H. B. Bare, Mr. P. C. Thicknesse, Mr. Hall Neale (President of the Liverpool Academy), Mr. Abraham, and others. The following resolution was adopted:—"Having regard to the commercial importance and prosperity of the city of Liverpool, this members' meeting of the Liverpool Architectural Society considers the appearance of the city should be worthy of such commercial greatness, and should express its own dignity. This meeting realises that this is only to be done by the combined efforts of all our worthy citizens. It therefore suggests to the Council of this city the advisability of having a committee to deliberate as to the best means of obtaining that end." It was also resolved:—"That the best thanks of this meeting be tendered to the various railway and other companies who have kindly sent copies of their posters in illustration of the advances made in well-designed poster production in England."

*See our issue for Feb. 3.

ENGINEERING SOCIETIES.

THE JUNIOR INSTITUTION OF ENGINEERS.—During the past few years this Institution has in various ways exercised itself in promoting a closer relationship between the professions of engineering and architecture. A movement in this direction took the form of a very fully illustrated lecture on "Architectural Design and Expression," which was delivered before the Institution at the Westminster Palace Hotel on Friday last week by Mr. H. Heathcote Statham, Mr. Lewis H. Rugg, A.M.Inst.C.E., presiding. The lecturer first pointed out the distinction between architecture and engineering, and dealt with the questions of the probable origin of the column and its wide influence on architecture. He then compared Egyptian columnar architecture with Greek, and showed the difference between imitative architecture and the quality of style. Architecture was not an imitation of nature. He cited the Parthenon as an example of intellectural refinement. The gradual transmutation of the column into the buttress was treated, and considerations in regard to mouldings, scale, and ornament were touched upon. Illustrations from some of the cathedrals were depicted, and the lecturer passed on to the architectural element in engineering works. Some interesting observations followed with respect to railway-stations, bridges—often a fit meeting-ground of architecture and engineering—and suggested principles of treating masonry bridges were introduced, comments on some existing examples and conclusions derived from them being given. He held that judgment in regard to architecture rested on acquired perception rather than on theory. A vote of thanks was accorded the lecturer, and the speakers in the discussion were Messrs. J. H. Pearson, J. Rennie, W. J. Tennant, J. Horsfield, S. Bylander, J. W. Nisbet, G. T. Bullock, G. Peyrecave, and Mr. Rugg.

THE INSTITUTION OF CIVIL ENGINEERS.—At the ordinary meeting on Tuesday, the 20th inst., Sir Alexander Binnie, President, in the chair, the papers read were:—"A Plea for Better Country Roads," by Mr. G. R. Jebb, M.Inst.C.E.; and "Country Roads for Modern Traffic," by Mr. J. E. Blackwall, Assoc.M.Inst.C.E. The author of the first paper, after pointing out that the proper maintenance of the country highways is a matter in which the whole community is interested, that the traffic on them is probably greater now than it ever has been, that many of them are badly maintained at extravagant cost, and that a new kind of traffic, viz., the motor-car traffic, has sprung up during the past few years, urges that the present is a specially fitting time for engineers to consider:—

(1) Whether they are adopting the best methods of maintaining the roads;

(2) What improvements are necessary to fit the roads for the new and increasing traffic.

With regard to (1) the author specially advocates that the roads should be better drained, and kept dry and free from mud; and he enumerates some of the advantages which the public would enjoy if this were done. Among these advantages is the fact that the dust nuisance, which has become a very serious question, would be practically abolished. He considers that the extra cost of labour would be more than counterbalanced by less outlay on future repairs. With regard to (2) the author considers it impossible to lay down any general rules that would be applicable to all roads in all districts; he recommends that the roads should be classified, and that they should be strengthened and improved on scientific principles according to special circumstances. More care should be taken in the selection of stone for macadam, and he deprecates using local stone because it is the cheapest. He invites discussion, and hopes engineers to county councils and others will state the result of their experience in the maintenance of roads, and especially as to the use of "Tarmac" or other dust-preventing material. He thinks that money would be better expended in improving the existing roads than in making new ones. The author also strongly recommends that all country roads should be repairable by the county councils, and points out generally, and also by reference to a special case, some of the serious disadvantages of the present system, under which the main roads only are repairable by the county councils, all other roads being repairable by district and borough councils.

If the author's suggestion as to keeping the roads free from mud were adopted throughout the country, a large number of additional labourers would be permanently needed, and he believes their work would be remunerative. If the roads were generally improved, a further large number of men would be wanted for several years to come, and the author thinks that no better or more useful work could be found for some of the able-bodied men who now swell the ranks of the unemployed, and that the work would be free from the serious objections which have been raised to many of the schemes which have been suggested for the benefit of that class.

The author of the second paper points out that it is now universally acknowledged that a radical improvement is required in the main roads of England, so that heavy traffic, consisting of traction engines, motor-lorries, and heavy carts, shall not cut up the surface and render it inconvenient for light, fast traffic, including motor-cars, light carriages, and cycles, and that foot passengers shall be protected from being run down or choked with dust by motor-cars. He suggests the gradual alteration, as funds allow, of existing main roads into twin roads, one for heavy traffic and the other for light, separated by a fence and a footpath. From what little data at present exist on the subject of the cost of maintenance of roads required for heavy traffic only, or for light traffic only, it appears probable that a saving of expense would in the long run result; and there would be, beyond doubt, advantages to the users of the road by separating the traffic. Whether the advantages would be worth the initial cost of alteration is a matter of opinion.

The details of construction would vary considerably according to local circumstances, the amount and weight of traffic, the value and nature of adjoining land, the cost of material delivered, etc. The minimum width of the two roads and footpath together should be at least 46 ft. between fences, 21 ft. for each road and 4 feet for the footpath. The surface water would be conducted into a pipe-drain under the footpath by pipes laid near the surface under the light road, and by cross-gutters over the heavy road, both roads sloping down towards the outer sides and towards the footpath. The two roads would converge into one at the entrance of a village or any confined space. All crossings of roads would be notified by sign-posts, and speed of traffic reduced to a safe maximum. At gateways into fields on the side of the light road a space would be left in the wire fence, closed by a rail pivoted to a post near one end, and opening upwards, assisted by a counterpoise at the other end.

For purposes of considering the probable cost of conversion of a road into a twin road the items which would occur on a typical road are set out below with suggested prices. It is assumed that the road, originally 30 ft. wide, is widened to 46 ft. between fences, and that the extra land required for this widening is given by the adjoining owner for the good of the public.

	Per lineal yard. £ s. d.
Moving fence	0 1 0
Removing sod and earth	0 0 2
Foundation stone, delivered	0 4 0
Road metal (3-in. gauge), delivered	0 3 4
Labour, packing, spreading, and rolling	0 2 0
Labour, making up footpath	0 1 0
Making up light road	0 9 6
Fencing	0 0 7
	£1 1 7

This would be practically 1,900*l.* per mile.

COMPETITION.

NATIONAL CONGRESS HALL, BRAZIL.—The Commercial Intelligence Branch of the Board of Trade have received from H.M. Consul-General at Rio de Janeiro an extract from the *Brazilian Review* giving particulars of a competition for the presentation of plans for the construction of a building for the National Congress of Brazil. Projects destined to compete will be received in the Secretarial Department of the Federal Senate up to 4 p.m. on May 31 next. Three prizes, of 15,000, 10,000, and 5,000 milreis, respectively, will be awarded to the authors of the best projects presented, and a further sum of 5,000 milreis is to be spent in acquiring projects which, although not awarded prizes, are in the opinion of the judging commission deserving of being acquired for the National Congress. The text of the programme, in accordance with which projects must be drawn up, may be seen at the offices of the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

BOOKS RECEIVED.

IMPRESSIONS OF JAPANESE ARCHITECTURE. By Ralph Adams Cram. (John Lane. 10s. 6d.)

MODERN BUILDINGS: THEIR PLANNING, CONSTRUCTION, AND EQUIPMENT. By G. A. T. Middleton, A.R.I.B.A. (The Caxton Publishing Company. 10s. 6d.)

BRIDGE AND STRUCTURAL DESIGN. By W. Chase Thomson, M.Can.Soc.C.E. (Engineering News Publishing Company, New York. 8s.)

TRADE CATALOGUES.

WE have received from the Leeds Fireclay Company three catalogues containing illustrations and prices of various sanitary goods manufactured by Messrs. Joseph Cliff & Sons, one of the associated firms in the Company. The catalogues are very well produced on good paper, all the illustrations being coloured, and full information is given as to qualities and prices. One catalogue deals with porcelain-enamelled fireclay baths and lavatories, the trade name for the ware being "Imperial Porcelain." The baths are made in various sizes, either taper or parallel, and with either plain rims or glazed rolls; the outside may be plain, white-glazed, or stone-enamelled in a selected tint. Special baths, such as sitz, foot, and sponge, are also shown, together with a number of taps, and other accessories. The lavatories are of a substantial character suitable for schools and factories as well as for houses and hotels; the new overflow for the "Carlton" basin is a great improvement on the older type. A second catalogue contains illustrations of fireclay closets and urinals. All the pedestal closets are of the usual wash-down type, but trough-closets are also shown. The urinals are of the stall type in salt-glazed ware or porcelain-enamelled fireclay, and are of different patterns suitable for the angles of rooms, for straight walls, and for independent groups. Various plans of urinal ranges are given, and there is a sheet of illustrations of flushing-cisterns, sprays, etc. The third catalogue deals with sinks of various kinds from the inexpensive cottage sink in brown-glazed stoneware to the special sinks for hospitals, etc. The combined sink and slop-sink in one piece of fireclay with separate trap to the slop-sink will prove useful, and the "open-overflow" sink, with drainer and skirting in one piece, is also a good fitting. Illustrations of slop-sinks, wash-tubs, bed-pan sinks, post-mortem and mortuary tables, sink fittings, etc., are also given.

From Messrs. G. Shrewsbury & Co. we have received a catalogue of their "Calda" water-heaters and other appliances. The "Calda" heaters have been extensively used for a generation for heating the water required for baths and other purposes, and many of the varieties serve the purpose admirably. It is, we think, a serious error of judgment to say that ventilating flues are "unnecessary," even though the statement is qualified by adding "if the bathroom is fairly large and the window open an inch or two while the gas is alight." It is true that such flues are not absolutely necessary in the case of geysers in which the products of gas-combustion are condensed by the water in its passage through the fitting, but such geysers do not yield *pure* hot water. The claim is made on page 2 that all "Caldas" yield "pure hot water . . . suitable for drinking and culinary purposes," but, unless we are mistaken, the "Unique" and "Favourite" Caldas shown on page 9 are of the condensing type. The catalogue contains illustrations of oil-heated Caldas, baths, gas-heated conservatory boilers and pipes, washing-coppers, etc.

The Down-draught Fireplace Co. have sent us a catalogue of Regester's patent down-draught fireplaces for burning anthracite or any other fuel. The special feature is the pair of openings (one at each side of the fire) level with the bottom of the grate, from which concealed smoke-pipes are carried up to the main smoke-flue above the fire. The illustrations do not show any method of regulating the draught in the upper and lower flues. Some of the grates are made with hot-air chambers, and ducts can be formed to convey the heated air into a room above.

The David Maydole Hammer Co., of Norwich, U.S.A., send us their catalogue of hammers as used by bricklayers, masons, tile-setters, joiners, engineers, machinists, boiler-makers, blacksmiths, and others. The heads of all hammers made by this firm are forged from crucible cast steel, and the standard manufactures of the firm include some 343 styles, sizes, and finishes. The fact that a large establishment is kept fully employed in the manufacture of hammers alone serves as a practical proof of the reputation for high quality enjoyed by the Maydole hammers, and illustrates the system of industrial specialisation practised in the United States.

Correspondence.

R.I.B.A.—ELECTION OF FELLOWS.

SIR,—In compliance with requisitions in writing duly signed according to the provisions of By-law 9, the election of the twenty-eight candidates for Fellowship, nominated by the Council for election at the business meeting on the 5th March, will be taken by voting papers.

The Council are aware that these requisitions proceed from a widespread feeling that the Institute should avail itself of the permission granted by clause 3 of the Charter to declare that every person desiring to be admitted a Fellow shall be required to have passed such examination or examinations as may be directed by the Royal Institute.

Sympathising with this feeling, the Council adopted it as their policy in 1904, and at a special general meeting, held on February 29, 1904, a resolution was passed to the effect that after December 31, 1906, no person shall be admitted a Fellow unless he is either an Associate or has passed the examination or examinations qualifying him as an Associate.

On the same evening, however, the general body passed the following resolution of the Royal Institute:—

"That during the intervening period (*i.e.*, till December 31, 1906) every architect eligible under the Charter for election who desires to join the Institute as a Fellow be encouraged to do so."

In consequence of these resolutions becoming generally known in the profession a large number of eligible candidates have come forward during the last two years. The Council are convinced that it is to the interests of the Institute that thoroughly qualified architects in various parts of the country whose age and busy practice preclude from entering for examinations should become Fellows before the door is for ever closed against them.

At the same time the Council has subjected the qualifications of candidates during the last two years to the same careful scrutiny and inquiry as has been their practice during the whole existence of the Institute.

To avoid any possible misapprehension the Council declare that the last election of Fellows under the existing system will be on December 3, 1906.

In view of the requisitions for a poll the Council think it right that members should be reminded of the above facts, and, as one adverse vote in four excludes, they desire to direct the attention of members to the gravity of their responsibility when they fill up their voting papers.

ALEXANDER GRAHAM, Hon. Secretary.
W. J. LOCKE, Secretary.
Institute of Architects, 9, Conduit-street, February 21.

FELLOWSHIP OF THE R.I.B.A.

SIR,—Will you permit us to return to this subject, in the hope of making clearer the points raised.

If only we could have the actual position and purpose of the Fellowship definitely explained, we should all know better where we stand. Surely it may be assumed that the original idea was to make the Fellowship a sign of eminence, more or less; otherwise why have a second class at all? And is not this confirmed by the fact of the subscription being higher? And does not the much discussed resolution of the Institute to shortly elect this class only from the ranks of the Associates prove it? If the contention that every competent architect has a *right* to election as a Fellow is correct, it seems to us that to force him after this year to go through an examination will be not only a distinct hardship, but an inconsistency. We cannot see what purpose of a worthy kind the Fellowship fulfils, unless it is to recognise a select or eminent class of men.

Our views (which we have reason to know are very widely shared) seem to be much misunderstood in London. We are working solely for fair play, and for the dignity of the R.I.B.A. So far are we from holding that the Associate's examination is the main essential, that we would willingly see the entrance to *our* class widened, and a man's practical work accepted in substitution for some or even all of the examination work; so long as it was definitely ascertained that the conception and details were entirely his own.

But, knowing the educational value of preparation for the examination, and remembering the constant emphasis hitherto placed upon it by the leaders of the R.I.B.A. and the Provincial Societies, we are bound to insist that it is (1) unfair to such examined men, (2) derogatory to the dignity and consistency of the Institute, and (3) unworthy of the candidates, as architects and gentlemen, to bring about this unseemly scramble for easy entrance to the Institute.

We are informed that "the By-laws allow this." We admit it; but the By-laws also allow the means of protest—the demand for a poll of the Institute. In demanding this, and for the whole of the candidates, we have acted on principle only; and we earnestly hope our action will not cause any injustice to the Associates in the nomination list.

We are further told that "the close time will expire in a year from now; cannot things be allowed to take their course"? This we would gladly have done; but our information shows that due care is not exercised by the Council in their nominations. We must protest, and have already effectively protested, against the official nomination of men who hope by the Fellowship to obtain that entrance to the Institute which they have signally failed to obtain as Associates, or of men whose practice is chiefly connected with Estate Agency and kindred work.

One other remark in conclusion. Of the present members of the R.I.B.A. Council, we find that more than 75 per cent. have at some time qualified as Associates. No further argument is needed; the Council has itself fully justified our contention.

Signed on behalf of the meeting of Leeds Associates.
W. G. SMITHSON, Chairman.
FREDK. MUSTO, Secretary.

Leeds, Feb. 21.

SIR,—I must beg leave to say a few words on behalf of the London men, in reply to Mr. Musto's letter.

I number among my friends a good many Associates who are by no means indifferent to the course of events during the last year or so, and I think I shall do no injustice to the majority of the London Associates when I say that it is an excess of discretion, rather than a lack of valour or conviction, that prevents their openly joining their provincial comrades and presenting a united front.

It is undoubtedly the opinion of a great many of us that the present policy of the Council is a mistaken one, inimical to the best interests of the Institute and derogatory to the dignity of the Fellowship; but few have, or can have, the opportunity of taking part in an ordinary election, and fewer still, it is to be feared, can afford, here in London, to be publicly identified with the whole-hearted action of the provinces, with its attendant risk of forfeiting the goodwill of their elders.

Nevertheless, a very strong current of opinion undoubtedly exists even in London; and as the question seems now likely to be brought to a definite issue, the opinion of the majority will doubtless be ascertained, and the future policy of the Council ordered accordingly.

PERCIVAL W. HAWKINS.

THE SOANE MEDALLION PRIZE DESIGN.

SIR,—It may interest your readers if you can add the following particulars as to the author of this scholarly, beautiful, and masterly design for Lord Bacon's Ideal Palace.

Mr. W. S. George is the son of an architect practising at Ashton-under-Lyne. After training in his father's office, he obtained a Lancashire County Council Scholarship in art, and was awarded a Royal Exhibitionship by the Board of Education. He entered the Royal College of Art in 1901 and obtained the travelling studentship in architecture of the College in 1903.

The interest and charm of Mr. George's draughtsmanship can be estimated from the plates that you published last week. BERESFORD PITE.

Royal College of Art, Feb. 21.

ROYAL SANITARY INSTITUTE.

SIR,—Many of your readers will, I think, be interested in having particulars of the Saxon Snell Prize.

This Prize was founded to encourage Improvements in the Construction or Adaptation of Sanitary Appliances, and is to be awarded by the Council of The Royal Sanitary Institute at intervals of three years, the funds being provided by a legacy bequeathed to the Institute for this purpose by the late Henry Saxon Snell, F.R.I.B.A.

The Prize consists of 50*l.* and a medal of the Institute, and is offered in the year 1906 for an Essay on "Suggestions for Improvements in Sanitary Appliances for use in Workmen's Dwellings and Labourers' Cottages under the varying conditions of Water Supply and Drainage usually obtaining in Towns and Villages."

E. WHITE WALLIS.
Secretary.

THE *PURPLE PATCH*.

SIR,—In the course of your very kind notice of the *Purple Patch* in your last issue you refer to a "delightful mock-mediæval" headpiece. This illustration was made from a very careful tracing of Mr. Eliot Hodgkin's reproduction of the original woodcut, which is perfectly genuine; the text also is a careful transcript, except in the matter of "long S's," which are unfortunately lacking in our fount of type. I think this slight correction is due to Mr. Hodgkin (whose name was quoted in the article), as he is one of the leading English authorities on early typography.

G. F. BLACKBURNE DANIELL,
One of the Editors, *Purple Patch*.

*** Evidently we overlooked the prefatory remarks above the drawing, which we took to be head-piece of the article. It was, as Mr. Pleydell said of Dominie Sampson, "a curiosity worth preservering."—ED.

WEST WALTON CHURCH, NORFOLK.

SIR,—I should be obliged if you would allow me to ask through your columns if any of your correspondents can inform me whether the ground plan of West Walton Church, Norfolk, has been published in any book, and, if so, where it is to be found. BERNARD J. MCADAM.

COURT OF COMMON COUNCIL.

A MEETING of the Court of Common Council was held at the Guildhall on Thursday, last week, the Lord Mayor presiding.

Street Improvements.—On the recommendation of the Improvements and Finance Committee, it was agreed to serve notices to acquire so much of the premises of 117 and 120, Fleet-street, and 33, Throgmorton-street, as is required for the improvement of those thoroughfares, and that 2,800*l.* should be offered for the last-named premises. The same committee also submitted arrangements, which the Court adopted, with St. Bartholomew's Hospital for acquiring their freehold interest in the ground needed for the improvement of Giltspur-street for the sum of 2,221*l.*, and with Messrs. Blessey for the freehold of the land required to widen the public way in front of 2 and 3, Warwick-lane, for 2,000*l.*

Heating of the Library.—The Library Committee were authorised to carry out an improvement of the heating apparatus in the library at a cost not exceeding 100*l.*

The Student's Column.

SOME MATHEMATICAL METHODS AND USEFUL DATA FOR ARCHITECTS.—VII.

SHORT CUTS TO DIVISION.

THE process of division can be much simplified by various devices, generally similar to those explained in the two preceding articles.

Contracted Method.

In cases where the numbers to be dealt with contain several decimals, the process of division can be considerably abbreviated without affecting the substantial accuracy of the result, as the quotient can be obtained correctly to a reasonable number of decimal places.

Rule.—The contracted method consists in cutting off a figure at the right-hand of the divisor after each new figure has been obtained in the quotient; but carrying any figures furnished by mental multiplication of the figures rejected from the divisor, and adding 1 to the figure carried if the next figure of the mental product has the value of 5 or more.

In the following examples the numbers are the same as those used in Examples (1) to (3) in Article V., p. 147.

Example (1): Divide 512·2122945 by 58·645 so that the quotient shall be correct to four places of decimals.

Contracted Method.		Ordinary Method.	
58645)5122122945(87341		58·645)5122122945(87341	
469160	=8·7341	469160	=8·7341
43052		430522	
41052		410515	
2000		200079	
1759		175935	
241		241444	
235		234580	
6		68645	
6		58645	
		10000	

As the result is not required to contain more than four decimals, we reject the figures 2, 9, 4, 5 in the dividend, and proceed as follows:—

Line (1).—Multiply the divisor by 8 to obtain the product 469160, which is subtracted from 512212, leaving the remainder 43052.

Line (2).—Reject the right-hand 5 in the divisor and divide into 43052. Multiplying 5864 by 7 take the cancelled 5 into account mentally, thus $5 \times 7 = 35$; then as 5 is to be taken as 10, carry 4 instead of 3 to the product of 4×7, making that individual product $4 + (4 \times 7) = 32$. Consequently the 2 is set down and the 3 carried to the next multiplication in the same line. The process is continued in the usual way until 41052 is obtained, this being subtracted from 43052, leaving 2000 as remainder.

Line (3).—Reject the figure 4 in the divisor, multiply 586 by 3, carry 1 from the mental multiplication of the two rejected figures, and proceed as in Line (2) to obtain 1759, which taken from 2000 leaves 241.

Line (4).—Reject 6 in the divisor, multiply 58 by 4, carrying over 3 from the mental multiplication of the figures rejected from the divisor. Proceed as before, obtaining the remainder 6.

Line (5).—Cancel 8 in the divisor, multiply by 1 carrying over 1, the value of the rejected figures.

The last figure in the quotient is 1, the required answer, after insertion of the decimal, being 8·7341.

By the preceding example it is demonstrated that the contracted method is quite as suitable for practical purposes as the ordinary process, while the saving of time and space is too obvious to require comment.

As in the converse process of multiplication we can adopt the contracted system for the treatment of large whole numbers in cases where minute accuracy in the units, tens, hundreds, or thousands places is not of importance.

The Italian Method.

This method of abbreviation has the effect of shortening the process of division, while still permitting exact results to be obtained. Instead of writing down the various products, and the difference between these products and the lines immediately above these, it is only necessary to record the difference between the separate figures of each product and the figures over them.

It is certain that familiarity with the Italian method enables the operator to diminish the mental exertion required for the performance of a given division sum by a very large proportion, because the complete calculation of the separate products of the divisor by each digit in the quotient is not necessary.

Example (4): Divide 6843580648 by 7324.

The following are the workings by the Italian method and the ordinary method:—

Italian Method.	Ordinary Method.
7324)6843580648(934404	7324)6843580648(934404
25198	65916
32260	25198
29646	21972
35048	32260
5752	29296
	29646
	29296
	35048
	29296
	5752

The process is conducted as follows:—

Line (1).—Under the dividend draw a line to indicate the digits necessary to express a number greater than the divisor. In this example the line extends below the figures 68435. By inspection the first figure in the quotient is evidently 9 (representing 900,000). Then, as $4 \times 9 = 36$, we have to deduct 36 from 5, but as this cannot be done we borrow 4 (representing 40) and get $45 - 36 = 9$, which is the first figure to be written. The figure 4 has to be carried to the next product $2 \times 9 = 18$ and $18 + 4 = 22$, which taken from the sum of 3 and 20 borrowed leaves $23 - 22 = 1$, this again being the figure to be recorded, while the 2 borrowed is carried forward. Next we have $2 + (3 \times 9) = 29$, which deducted from $4 + 30 = 34$ gives 5 as the difference to be written and 3 to be carried. Finally, $3 + (7 \times 9) = 66$, and taking this from 68 we are left with 2, the last figure of the difference 2519. Repetition of the same process for the other figures of the dividend gives the quotient 934,404 with 5752 as remainder.

A more facile mode of dealing with the figures is to add instead of subtracting the figures in ascertaining the differences.

Thus:—

$(4 \times 9) + 9 = 45$ (carry 4)
$4 + (2 \times 9) + 1 = 23$ (carry 2)
$2 + (3 \times 9) + 5 = 34$ (carry 3)
$3 + (7 \times 9) + 2 = 68$

The figures printed in italics represent the first figure of the quotient and those in thick-faced type constitute the first line of differences.

The other figures in the quotient and the lines of differences are ascertained in a similar manner, giving the quotient 934,404 +, as before.

Comparison of the working with that under the ordinary system will be sufficient to indicate how great a saving of time can be effected by using the Italian method.

Simplified Method by Reduction of the Terms.

If the divisor and the dividend can be reduced materially by the use of the greatest common divisor (termed the *Greatest Common Measure*, or *G. C. M.*) of the two numbers, considerable simplification of division can frequently be effected.

Even if the determination of the G. C. M. would not repay the trouble involved, time can often be saved by using a smaller common measure which can be ascertained by inspection.

Thus we have available two variations of the same principle, which is illustrated in the following examples:—

Example (1): Divide 3072 by 108.

Here the G. C. M. = 12, and the process of reduction and division is:—

12)108 3072
9)256
28·44

Example (2): Divide 1285 by 35.

Here both numbers are evidently divisible by 5. Hence we have

5)35 1285
7)257
36·71

Division by Certain Numbers.

To divide any three-figure whole number by 11.

Rule.—In any three-figure whole number in which the second digit is equal to the sum of the first and third digits, the first and third digits represent the quotient of the number after dividing by 11.

Example (1):—

$792 \div 11 = 72$
$242 \div 11 = 22$
$341 \div 11 = 31$
$110 \div 11 = 10$

Note.—The same principle can be applied conveniently to the division of some three-figure and four-figure numbers by multiples of 11, as demonstrated by the following examples:—

$484 \div 22 = 22$
$748 \div 22 = 34$
$1386 \div 22 = 63$
$693 \div 33 = 21$
$1089 \div 33 = 33$
$2079 \div 33 = 63$

A little practice will enable the user to deal with suitable numbers in this way, even when figures have been carried from one place to another.

To divide any whole number by 11·25, 112·5, 1125, *and so on.*

Rule.—From the number subtract one-ninth of that number, and by a decimal point mark off from the right-hand end of the result one, two, or more figures, according as the integral part of the divisor represents tens, hundreds, and so on.

Example (2): Divide 72543 by 11·25.

9)72543
8060·33

$64482{\cdot}66 = 6448{\cdot}266$

To divide any whole number by 12·5, 125, 1250, *and so on.*

Rule.—Multiply the number by 8, and mark off by a decimal point as many figures from the right-hand end of the number so obtained as there are figures in the integral part of the divisor.

Example (3): Divide 72543 by 12·5.

72543
8

$580344 = 5803{\cdot}44$

To divide any whole number by 13·3, 133·3, 1333·3, *and so on.*

Rule.—From the number subtract one-fourth of that number, and by a decimal point mark off from the right-hand end of the result, one, two, or more figures according as the integral part of the divisor represents tens, hundreds, and so on.

Example (4): Divide 72543 by 13·3.

4)72543

18135·75

54407·25 = 5440·725

To divide any whole number by 14·2857, 142·857, 1428·57, *and so on.*

Rule.—Multiply the number by 7, and mark off by a decimal point as many figures from the right-hand end of the number so obtained as there are figures in the integral part of the divisor.

Example (5): Divide 72543 by 14·2857.

72543

7

507801 = 5078·01

To divide any whole number by 15, 150, 1500, *and so on.*

Rule.—From the number subtract one-third of that number, and by a decimal point mark off from the right-hand end of the result, one, two, or more figures according as the divisor represents tens, hundreds, and so on.

Example (6): Divide 72543 by 15.

3)72543

24181

48362 = 4836·2

To divide any whole number by 16·6̇, 166·6̇, 1666·6̇, *and so on.*

Rule.—Multiply the number by 6, and by a decimal point mark off from the right-hand end of the result one, two, or more figures according as the integral part of the divisor represents tens, hundreds, and so on.

Example (7): Divide 72543 by 16·6̇.

72543

6

435258 = 4352·58

To divide any whole number by 25.

Rule.—Multiply the number by 4, and mark off by a decimal point the two right-hand figures of the number so obtained.

Example (8): Divide 72543 by 25.

72543

4

290172 = 2901·72

GENERAL BUILDING NEWS.

CHURCH, TOTTENHAM.—The Lord Mayor laid the foundation-stone of the permanent Church of St. Philip the Apostle, South Tottenham, the building being intended to supersede an iron mission church in Philip-lane, connected with Holy Trinity, Tottenham. Accommodation for a congregation of 750 will be afforded by the new church, which will be built in brick and stone by Dove Brothers, from Mr. J. K. Cutts's designs.

ROMAN CATHOLIC CHURCH, READING.—The new Church of St. William, in Upper Redlands-road, Reading, was opened recently. The church will, when completed, be 90 ft. long and 50 ft. wide, with seating capacity for 450 persons, but until sufficient money is raised the erection of the sanctuary will remain in abeyance, and a building 63 ft. long by 24 ft. wide, capable of holding 200 persons, has been erected. The architects are the Rev. Canon A. J. C. Scoles and Mr. G. Rayment, of Basingstoke. The church is built of red brick with stone facings. The builder is Mr. W. Hawkins, Reading.

PROPOSED CHURCH, BURNLEY.—The new Church of St. Cuthbert is to be built in Townley-street, Burnley-lane. The plan is the usual one of nave with north and south aisles, chancel, south chapel, and vestries, the organ being in the north chancel aisle. The west wall of the nave is segmental in form so as to provide a baptistry, and at the south-west corner a bell turret rises. Two porches on the south side give access to the church, and there is an emergency exit on the north. Six arches on each side divide the nave and chancel from the aisles and chapel, and carry the clearstory walls, which are pierced with lancet-headed windows. The nave and aisles accommodate 450, the chapel 42, and the chancel 40. The walls are to be faced inside and out with Accrington red plastic bricks, having external dressings of Cullingworth stone and internal dressings of white Hollington stone. All the roofs are to be of wrought pitch-pine, open timbered, boarded and felted, and covered with north country slates. The floors in the nave and aisles to be of joists and boards under the seats, and polished flags in the passages, the chancel and chapel of vitreous mosaic and wood blocks respectively. The designs are by Mr. R. B. Preston, architect, Manchester.

CHURCH RESTORATION, HUNTINGFIELD.—The restoration of Huntingfield Church, which was commenced some ten years ago, has now been completed. The work has been executed by the contractor, Mr. Robert Etheridge, of Fressingfield, and the masonry by Mr. Perfitt, of Harleston, from plans and designs and under the supervision of Mr. C. H. Lohr, architect, of London and Leicester.

SCHOOL, HANWELL.—A new school has just been opened at Oaklands-road, Hanwell. The Oaklands-road School affords accommodation for 1,143 scholars—viz., senior mixed department, 388; junior mixed department, 388; infants department, 367. The school is arranged in a two-story building for mixed classes, and a separate building for infants. Each department has a central hall and classrooms. There are also lavatories, teachers'-rooms, store-rooms, etc., on the mezzanine floors. The buildings are heated by hot water and open fireplaces. The floors are fireproof, being constructed with concrete on steel girders. Each department has two entrances, and the senior mixed department has two staircases. Two cloakrooms are provided for each department. The external walls are built with stock bricks, and the roofs are covered with slates. The playgrounds are large, and will be paved with asphaltic tar, and have two covered shelters. A caretaker's house is provided. The contract price is 18,250*l*. Mr. W. Pywell is the architect.

SCHOOL, CARTER KNOWLE, SHEFFIELD.—A new school has been erected at the junction of Carter Knowle-road and Bannerdale-road for Sheffield Education Committee. The school will accommodate 300 infants, and 400 older boys and girls. It is arranged on the central hall principle. The hall measures 84 ft. by 30 ft., and is divided by sliding screens. Around it are twelve class-rooms, varying in size from 25 ft. by 24 ft. to 25 ft. by 22 ft. The whole of the buildings are heated with a low-pressure hot water apparatus. The site, being a sloping one, cookery and manual centres are provided on the low level, each department affording accommodation for upwards of forty pupils. All the classrooms are at least 14 ft. high, and an area of 10 superficial feet is allowed for each child. The total outlay on the school has been 15,220*l*. The site covers two acres (one of which is devoted to playgrounds), and there is space for the erection of another department in case of need. The building has been erected from the designs of Messrs. Holmes & Watson, architects, Sheffield.

SCHOOL, WEST CALDER, GLASGOW.—Gavieside School, which has been reconstructed and enlarged by the West Calder School Board, was opened on the 12th inst. The boys' and girls' entrances and five class-rooms, giving accommodation for about 280 scholars, are grouped round three sides of a central hall, and each apartment opens directly off it. Two teachers' rooms and the boys' and girls' cloak-rooms and lavatories form the remaining side of the hall, and look towards the front. The cost of the new work is about 1,750*l*., and the architect is Mr. William Baillie, Glasgow.

RAILWAY MISSION HALL, SALISBURY.—The foundation-stones of a new mission hall have just been laid in Devizes-road, Salisbury. The work is being carried out from designs prepared by Mr. A. C. Bothams, architect.

HOSPITAL EXTENSION, MANSFIELD.—The memorial-stones were recently laid of the extensions which are being made to the Mansfield Hospital. The scheme provides for a ward capable of containing twenty-six additional beds, as well as extra kitchen accommodation and rooms for the augmented staff. Mr. R. F. Vallance is the architect of the work, the estimated cost of which is 6,600*l*.

COUNTY MUSEUM, LINCOLN.—The conversion of the building known as the Grey Friary, at Lincoln, into a county museum has just been completed. The Grey Friary is a building of two stories, and forms a small portion of what was once a complete monastic establishment, erected in the first half of the XIIIth century. The architects who have been responsible for the conversion of the building (Messrs. Watkins & Son), in their report to the Corporation, state that the original roof still remains intact over the eastern end of the main building. It consists of trussed rafters, with semi-circular trusses to each pair. The rooms are well lighted and heated, and the structure well arranged for its purpose, while its ancient character has been preserved.

NEWPORT LUNATIC ASYLUM, CAERLEON, MON.—The new asylum for the county borough of Newport, situate at Caerleon, has just been opened. The buildings, with their equipment and furniture, will cost 116,000*l*., and roads and bridges represent about 6,000*l*. The laying-out of the grounds and fencing, architect's commission, clerk of the works' salary, legal costs, and miscellaneous expenditure not yet completed are estimated at 17,000*l*., bringing the total estimated expenditure to 155,000*l*. The accommodation provded is for 368 patients, with administration offices sufficient for 500 patients, thus enabling two further blocks of buildings for patients to be erected without requiring any addition to the administrative block. The architect for the buildings was Mr. A. J. Wood, of London, the contractors Messrs. John Linton & Co. (Limited), of Newport, and the clerk of works Mr. W. B. Partington. The Borough Engineer (Mr. R. H. Haynes) carried out the diversion of road and the construction of a new bridge over the Great Western Railway. The blocks for patients are two stories in height, those nearest the centre being allotted to sick and infirm cases, and consisting of a ward for 30 patients on each floor. The next block is designed for 35 epileptic and 35 quiet chronic cases, the epileptics being accommodated in a ward on the ground floor and the quiet chronics in a similar ward on the first floor. Next this is the recent and acute block, comprising a ward for 27 patients on either floor. The future extensions will consist of a block beyond the recent and acute on each side for working patients, that on the female side being contiguous to the laundry, and that on the male side adjacent to the workshops. The asylum is so designed that these additional blocks may be added without in any way disturbing the patients or interfering with the working of the institution. The official block is placed centrally to the south of the administrative offices. The great fall in the ground from back to front would not admit of this block being placed to the north, the position recommended by the Commissioners in Lunacy. It is a two-story building, containing on the ground floor committee room, receiving room, photographic studio, etc. The upper floor is allotted to the assistant medical officer and the matron, their quarters being quite separate and reached by different staircases. On the male side, in close proximity to the site for the future block for working patients, are the workshops. They comprise shops for shoemakers, tailors, upholsterers, carpenters, plumbers, painters and glaziers, bricklayers' shed, foreman's office, etc. The boiler-house block is placed to the east of the workshops, and contains, in addition to the boiler-house, coal stores, electric plant room, battery-room, pump-room, engineers' shop, office, etc. The blocks for attendants and nurses are placed in the usual position east and west of the administrative offices. They include the necessary mess and recreation rooms on the ground floor, the upper floor being allotted to night nurses and domestics on the female side and to night attendants on the male side. The buildings are lighted throughout by electricity, the current being generated in the institution. Electric fire-alarms, tell-tales, bells, and telephones are installed throughout the buildings. Fire-alarms are provided in each ward and section of the building. In addition to the two means of exit provided from each ward ample precautions have been taken in case of fire, both the interior and exterior of the building being commanded by hydrants of the latest type. The following detached buildings are provided in addition to the main asylum:—Chapel, mortuary, farm buildings, six cottages for staff, two entrance lodges, cottage for bailiff, and garden buildings.

WORKMEN'S INSTITUTE, YNYSHIR.—The new workmen's hall and institute at Ynyshir was opened on the 3rd inst. The building is of native stone and, in addition to the hall, contains a library, billiard-rooms (two tables), a committee-room, providing seating accommodation for 200 people, games rooms for boys, a gymnasium, and a large reading-room. The institute will be provided with its own electricity and gas. The electric plant was supplied by Messrs. Clay Bros., Cardiff; the suction gas plant by Messrs. William Grice & Co.; and the heating apparatus by Messrs. Stoll & Co., of Oldham. The contractor was Mr. David Richards, Ynyshir, and the architect Mr. E. Williams, Cardiff. The cost was 7,900*l*.

FREE LIBRARY, CHELMSFORD.—The Chelmsford Free Library and Reading Room, Museum, and School of Art were opened recently by Lady Rayleigh. The building consists of a central block, with two wings. On the ground floor are the entrance-hall, librarian's and curator's offices, the library and reading-room, and the museum and museum library. The school of art occupies the whole of the first floor, and above are a store-room and caretaker's apartments. The cost of the work, including the site, was about 8,000*l*. Mr. Cuthbert Brown is the Borough Surveyor.

PROPOSED HOSPITAL EXTENSION, MIDDLESBROUGH.—At a meeting of the council of the North Ormesby Hospital, Middlesbrough, on the 9th inst., Mr. J. M. Bottomley, architect, reported that the proposed addition, to be known as the Elizabeth Brown wing, would cost 6,000*l*., and the alterations to existing buildings he estimated would cost 1,375*l*. After some discussion it was decided to carry out the improvements, omitting the staircase and lift, with approaches, estimated at 500*l*., the amount to be expended thus being 6,875*l*.

LIBRARY, CARLTON.—A new free library was opened at Carlton on the 10th inst. The building contains a newspaper and magazine room, lending and reference departments, recreation-room, and librarian's-room. There is also lavatory accommodation. The exterior of the building is of red brick with Hollington stone dressings. The

internal fittings are of polished oak with pitch-pine wood blocks. The contractors have been as follows:—Bricklayers and joiners, G. T. Tegerdine, Carlton; masons, Ward & Adams, Nottingham; slater, A Wright, Nottingham; plumber, J. Straw, Carlton; painter, J. Bryan, Carlton; plastering and mosaic paving, Midland Plastering Company. The total cost of the building has been 1,800*l*. Mr. J. C. Haller, from whose plans the library has been built, has superintended the erection.

APPOINTMENT.

LLANDAFF DIOCESAN ARCHITECT.—The Bishop of Llandaff presided over a meeting of the Llandaff Diocesan Society at Cardiff on Friday last week, and the appointment of an architect in succession to the late Mr. John P. Seddon was considered. Mr. F. R. Kempson, of Cardiff, was appointed.

SANITARY AND ENGINEERING NEWS.

SEWERAGE WORKS, ABBOTS LANGLEY.—These works have been carried out by Mr. H. Brown, contractor (Watford), from the designs of Mr. E. Lailey, Surveyor to the Watford Rural District Council. The sewage from Hunton Bridge, Upper Highway, and Abbots-road gravitates to a large receiving tank at Hunton Bridge, holding some 120,000 gallons. From this the sewage is lifted by pumps to the new disposal works near Abbots Langley, 12 acres in extent, where it is first treated in a large septic tank, holding 60,000 gallons, and then passed through continuous filters composed of beds of washed clinkers, broken to various sizes by means of automatic sprinklers supplied by Messrs. Ham, Baker, & Company. The effluent from these filters is then taken on to the land, which is of a porous nature, and well adapted for further filtration. The cost of the work was 20,000*l*.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—The partnership between Mr. W. Clifford Parnell and Mr. J. F. Fogerty, architects, has been dissolved, and Mr. Fogerty has taken into partnership Mr. George Brumell, A.R.I.B.A. The practice will be carried on as heretofore, at Belfast House, Gervis-place, Bournemouth, under the names of Fogerty & Brumell.——The *Sanitary Journal* has removed its offices to 13, Victoria-street, S.W.——Messrs. Johnson, Clapham, & Morris, of Manchester, manufacturers of steel concrete wire lattice, have opened London offices at Queen Anne's Chambers, Broad-street, Westminster, S.W.

IMPORTS AND EXPORTS OF CEMENT.—According to the Board of Trade's return of accounts relating to trade and navigation of the United Kingdom, the imports of cement for building and engineering purposes in the year ended December 31 last amounted to 234,588 tons, valued at 300,324*l*., as compared with 272,945 tons, value 393,145*l*, in the year 1904, and 261,077 tons, value 410,027*l*. in 1903. The exports of British cement for the last three years have been as follows:—

	1903. Tons.	1904. Tons.	1905. Tons.
To Netherlands	2,471	1,925	5,319
„ U.S. of America....	21,235	5,073	11,590
„ Brazil	4.052	6,445	13.919
„ Argentina	17.929	15,014	17,688
„ British S. Africa ..	80,679	83,629	85,019
„ „ E. Indies ..	63,472	81,685	97,864
„ Australia	17,765	16,292	15,432
„ New Zealand.....	31,222	24,805	28,351
„ Canada	29,194	16,561	28,303
„ Other Countries ..	131,969	133,154	153,073
Total ..	399,988	384,583	456,558
Value	1903. £	1904. £	1905. £
To Netherlands	4,565	3,609	8,862
„ U.S. of America ..	38,085	12,210	22,633
„ Brazil	8,363	12,321	23,134
„ Argentina	31,584	24,877	28,326
„ British S. Africa ..	132,210	130,199	126,111
„ „ E. Indies ..	108,643	138,298	159,354
„ Australia.....	29,100	25,721	22,913
„ New Zealand	51,343	40,458	44,545
„ Canada	50,277	29,249	47,966
„ Other Countries....	222,582	215,394	237,942
Total ..	£676,752	£632,236	£721,786

PILGRIMAGE OF THE ROMAN WALL.—The Newcastle Society of Antiquaries have resolved, in conjunction with the Cumberland and Westmorland Antiquarian and Archæological Society, to repeat the decennial pilgrimage of the Roman Wall. The event is proposed to be held during the last week in June, and the entire length of the works, from Wallsend to Bowness, will be examined on consecutive days. The annual report of the Council of the Newcastle Society of Antiquaries (established ninety-three years ago) contains the following reference to the matter:—The Council received a communication from the Cumberland and Westmorland Antiquarian and Archæological Society as to the desirability of repeating the decennial "pilgrimage" of the Roman Wall, and they unanimously resolved to act in conjunction with the Cumbrian Society in making necessary arrangements for the purpose. It was proposed to negotiate with a view to holding the pilgrimage during the last week in June next, and to examine the entire length of the works from Wallsend-on-Tyne to Bowness-on-Solway on consecutive days. This would count as the fourth of similar undertakings due to the initiative of the late Dr. Bruce. The first of these began on June 25th, 1849. After a lapse of thirty-seven years the project was revived, and a second expedition was organised, beginning on June 26th, 1886. Of this undertaking Dr. Bruce was announced as "chief pilgrim and expounder-general." After his death, in 1892, it was proposed to hold another pilgrimage at an interval of a decade, having it specially in view to commemorate thereby the distinguished services of Dr. Bruce as historian and elucidator of the wall. In this way the third of the series was begun on June 22nd, 1896. Another decade has now elapsed during which, as the results of further investigation, many new and important facts relative to the Roman occupation of these parts had yielded themselves for consideration. The tenth anniversary of the pilgrimage of 1896 occurring in the present year might therefore be commemorated appropriately by a repetition of the journey, directed by the united Societies, who were the more specially and intimately concerned, inasmuch as the Roman Wall was within their province. Its investigation, advanced in so remarkable a degree in the XVIIIth century by John Horsley, was notably continued in the XIXth century by two former secretaries of their own Society, John Hodgson and John Collingwood Bruce. By the last this had been done so conspicuously that he had identified himself with any reference to the subject, and, in popular association, Dr. Bruce would continue to be regarded as its "chief pilgrim and expounder." The commemoration of his great services would thus add a further interest to the projected pilgrimage of 1906.

THE CONDITION OF PUBLIC MONUMENTS IN EDINBURGH.—A meeting of the sub-committee of the Lord Provost's Committee of Edinburgh Town Council had under discussion on the 8th inst. Councillor Fraser's motion as to what should be done to restore and preserve the public monuments of the city. A report on the condition of the various monuments in the city, which was submitted, stated with reference to the Scott Monument that though the monument might be considered in fairly good order there were parts which required attention. The stonework would have to be carefully gone over, and any parts that required it judiciously painted. Owing to exposure the marble figure of Scott had now a granular surface, which would have to be removed by careful scraping or filing, after which the figure would have to be repolished. The same treatment would have to be given to the marble figure of Allan Ramsay, which, owing to its more exposed situation in Princes-street-gardens, was black and discoloured in parts. In connexion with the Burns Monument on Calton Hill, the report stated that the stone showed signs of increasing waste. Some years ago portions of the more delicate parts were found to be obliterated, and they were renewed with cement work. Now, however, it would be advisable to effect any renewals of this description by stone insertions. The Livingstone Monument, the Adam Black, Wilson, and Simpson memorials in Princes-street-gardens, it was further stated, would require to be thoroughly washed and polished; the bronze figure and the granite stonework of the Prince Albert Memorial in Charlotte-square, the Chalmers, Pitt, and George IV. monuments in George-street, would have to be similarly treated. The Dugald Stewart Monument on Calton Hill was in need of attention, particularly the panel, and the inscription required recutting. A considerable amount of pointing required to be done on Nelson's Monument, but though some portions of the rock below it were found to be wasting, it was not necessary to deal with it at the present time. The Committee agreed to recommend in terms of the report, with the further recommendation that expert advice be taken as to the manner in which the marble figures of Scott and Ramsay should be treated.

MEMORIAL TO THE LATE MARQUIS OF WINCHESTER.—A memorial to the late Marquis of Winchester, erected by all ranks of the Coldstream Guards, was unveiled by General Sir F. Stephenson a short time ago at Amport St. Mary church, near Andover. The memorial, which was designed and executed by Mr. Goscombe John, A.R.A., consists of a mural tablet in alabaster, with a medallion portrait of the late Marquis, and into the design are worked angels with trumpets, the badge and motto of the regiment, and the arms and motto of the Paulet family. There is a suitable inscription in gold lettering, and the whole is surmounted with a bronze figure of a Crusader.

EDUCATIONAL POST-CARDS.—The publishers of the *Country Press* send us specimens of the first issue of their Educational Post-Cards, which form the commencement of a National History Series. The specimens sent give photographs of various types of British ferns, several on each card, with number references and names in the margin.

HAMPSTEAD HEATH PROTECTION SOCIETY.—The Report of this Society for 1905 shows that it is keeping up its vigilance to prevent any injury to the character of the Heath. The Report was presented at the eighth annual general meeting on the 17th inst., at Stanfield House, Lord Mansfield presiding. Among other points, the Committee had suggested to the London County Council that a greater vigilance on the part of the custodians would prevent much wanton damage to trees, shrubs, and flowers, and had called the attention of the Council to the deposition of clay and rubbish on the piece of ground adjoining the stream above the Hampstead Bathing Pond, and suggested that if that rubbish depository were retained in use it should be screened from sight by an irregular planting of gorse and hawthorn bushes. The Committee wrote to the Coal Smoke Abatement Society with reference to the daily emission of black smoke from a chimney-stack belonging to the generating-station of the Metropolitan Railway at Neasden, which was a defilement of the landscape seen from the crest of the Heath, and from Golder's Hill. The Coal Smoke Abatement Society had been for some time watching this case, and, as soon as possible, took prompt action thereon, with the result that the railway company was fined. The Committee in October last considered the subject of the proposed erection of shelter seats on the edge of the footpaths along the Spaniards-road, and resolved that the erection of the proposed shelters should be opposed on the grounds that they would be destructive of the natural aspect of the Heath; that there is little or no demand or necessity for such structures, and that they would be objectionable on sanitary grounds, and be liable to misuse (in all of which we are quite in agreement with them). The result was that the proposed donor of these shelter seats finally withdrew his offer, at the same time expressing his desire to serve the interests of the inhabitants of Hampstead, and the general visitors to Hampstead Heath.

INCORPORATED CHURCH BUILDING SOCIETY.—This Society held its usual monthly meeting on Thursday, the 15th inst., at 7, Dean's-yard, the Rev. Canon C. F. Norman in the chair. Grants of money were made in aid of the following objects viz.:—Building new churches at Brentford, S. Faith, Middlesex, 225*l*., and Hilderthorpe, Emanuel, near Bridlington, 120*l*. in lieu of a former grant of 80*l*.; towards rebuilding the church of S. George, Kendal, Westmoreland, 100*l*.; and towards enlarging or otherwise improving the accommodation in the churches at Hucknall Huthwaite, All Saints, near Sutton-in-Ashfield, Notts, 40*l*., making in all 80*l*.; Streatham Hill, S. Margaret, Surrey, 150*l*., making in all 350*l*., and Stretford, All Saints, near Manchester, 60*l*. A grant was also made from the Special Mission Buildings Fund towards building a mission church at Cynllwyn-du, S. David, near Tylorstown, Glam., 50*l*. The following grants were also paid for works completed:—Manselton, S. Michael and All Angels, near Swansea, 150*l*.; Usworth, Holy Trinity, Co. Durham, 35*l*., and Brereton, S. Oswald, near Sandbach, Cheshire, 25*l*. In addition to this, the sum of 120*l*. was paid towards the repairs of eleven churches from Trust Funds held by the Society. The Annual General Court of the Society will be held at the Church House, Dean's-yard, Westminster, on Thursday, May 17th, at 3 p.m., when the chair will be taken by His Grace the Lord Archbishop of Canterbury, President of the Society.

ROYAL SANITARY INSTITUTE.—The following is the list of Fellow, Members, and Associates elected during February, *i.e.*, *Fellow*—S. E. Burgess, M.Inst.C.E. (Borough Engineer, South Shields). *Members*—G. S. B. Andrews, M.Inst.C.E. (Town Engineer, Johannesburg); T. C. Aveling, A.M.Inst.C.E. (Birmingham); H. Chesson, D.P.H.Lond., M.R.C.S., L.R.C.P. (Clapham Park, S.W.); J. H. Frogley, A.M.Inst.C.E. (Bradshaw, Bolton, Lancs.); Miss E. Halsey (Saltley, Birmingham); Miss A. E. Moss (Small Heath, Birmingham); J. Nigley (Dartford, Kent); G. Pettit (North Kensington, W.); G. H. Reynolds (Folkestone); T. F. Roddick, M.D., LL.D.Edin. (Montreal, Canada). *Associates*—A. J. Abbott (Totnes); T. W. Andrews (Teignmouth); R. Basford (Plymouth); Miss A. M. Beale (Stoke, Devonport); H. Brooks, (Gosport); T. W. Clarke (Horbury, near Wakefield); S. S. Dillingham (Luton); J. T. Durkin (West Hartlepool); W. Ellis (Wakefield); C. E. Hagley (Claremont, Cape Town); W. Hardy (Bradford); H. T. Hay (Grimsby); J. Herrin (London, S.W.); Miss A. A. Hogarth (Preston); W. H. Hughes (Aberdare); Miss M. S. Jarvis (Moss Side Manchester); W. Johnson (Wallsend-on-Tyne); R. W. Kitchin (Manningham, Bradford); J. Lamond (Wallsend); I. C. Morrison (St. Albans); R. E. Price (Mold, Flint); A. Rance (Claremont, Cape Colony); Miss E. Reinherz (Bradford); E. G. Southon (Cranbrook); W. J. Stone (Bootle, Liverpool); L. Tait (Morpeth Common, Northumberland); T. J. Tilbrook (Plymouth); B. P. Tarnt (Kingsbridge, Devon); J. Turner (Waterfoot, near Manchester W. W.

Walker (Fulwood, Sheffield).——At the twenty-third annual Congress, to be held at Bristol from July 9th to 14th, Sir Edward Fry, F.R.S., has consented to act as President. The Duchess of Beaufort will preside over the Ladies' Conference, and the following will act as Presidents of Sections:—*Section I.*—"Sanitary Science and Preventive Medicine," Sir William J. Collins, M.D.; *Section II.*—"Engineering and Architecture," Mr. Edwin T. Hall, V.-P. R.I.B.A.; *Section III.*—"Physics, Chemistry, and Biology," Mr. W. N. Shaw, F.R.S.

PATENT OFFICE.—An open competitive examination for not fewer than twelve situations as assistant examiner in the Patent Office will be held by the Civil Service Commissioners in April next. The examination will commence on the 23rd of the month, and forms of application for admission to it are now ready for issue and may be obtained on request addressed by letter to the Secretary, Civil Service Commission, Burlington-gardens, London, W.

BUILDERS' EXCHANGE, BIRMINGHAM.—The second of the series of the lectures at the Builders' Exchange, Birmingham, was delivered on the 15th inst., Mr. John B. Whitehouse (President of the Birmingham Master Builders' Association) presided. Mr. F. G. Whittall (President of the Midland Centre of the National Federation of Building Trade Employers) lectured on "The Housing Problem." He emphasised the necessity for the abolition of slums and for proper supervision of all property in which the very poorest are compelled to live. By the aid of lantern slides he showed the condition of houses, exteriors and interiors, before and after repairs. He contrasted property in which landlords take an interest with that which landlords neglect; stating that if the landlords take no interest, neither will the tenants. The lecturer compared the conditions which obtain in Birmingham with those which obtain in German cities. In Germany, since the necessity for walled cities had disappeared, building operations had extended outside the city walls. The authorities retained the power to develop the land on definite plans, which embraced good wide roads as main thoroughfares, with narrower roads for intercommunication. They curved the line of the roads, as affording rest for the eye, and provided open spaces, the selection of which was governed by the prevailing direction of the wind, to secure an abundant supply of fresh air.

APPOINTMENT OF SANITARY OFFICERS.—The Local Government Board has sanctioned the appointment of Mr. J. W. Hall as sanitary inspector in the metropolitan borough of Hackney; also of Mr. J. H. Pearson as sanitary inspector in the metropolitan borough of Shoreditch. The Board has also sanctioned increases in the salaries of sanitary inspectors in the metropolitan borough of Deptford as follows:—Mr. J. H. Danson, Mr. J. V. Snowdon, and Mr. J. Owner.

DISPLACEMENT OF PERSONS OF THE WORKING CLASS.—The Working Classes Committee of the London County Council brought up the following report at the meeting last Tuesday:—"In continuation of previous reports on the subject of the displacement of persons of the working classes in connexion with the development of private property, we desire to draw attention to clearances effected in the metropolitan boroughs of Finsbury, Holborn, Islington, Lambeth, and Southwark. In Finsbury 43 houses containing 154 rooms forming a block between Ironmonger-row, Dingley-road, Lever-street, and Hull-street have been demolished, and it is estimated that about 265 persons of the working class have been displaced. As regards Holborn, we are informed that 9 shops with tenements over situated in Great St. Andrew-street and Great White Lion-street, Seven Dials, are about to be sold by public auction. The buildings contain 67 rooms, which were occupied by persons of the working class, of whom about 120 have been displaced, 10 others being under notice to quit. In Islington 15 houses have been demolished and 11 others are about to be demolished in Norfolk-street. The buildings contained 146 rooms, inhabited by about 216 persons of the working class, and it is proposed to erect upon the site working-class dwellings, containing accommodation for a number equal to that displaced. In Lambeth 9 houses containing 45 rooms in Chester-street have been demolished and about 70 persons of the working class have been displaced. On the site dwellings are being erected which will provide nearly double the accommodation contained in the old buildings. As regards Southwark, an important scheme for the reconstruction of working-class dwellings west of Walworth-road is in progress. In all 100 houses containing 523 rooms in Hillingdon-street, Heiron-street, Jerome-place, and Kettle-place will be demolished, and about 617 persons of the working class will be affected. On the site it is proposed to erect 85 houses containing 170 four-roomed tenements, or 157 rooms more than were contained in the old houses."

BOURNEMOUTH AND DISTRICT MASTER BUILDERS' ASSOCIATION.—The eighth annual dinner in connexion with the Bournemouth and District Master Builders' and Decorators' Association was held at the Princes Hall of the Grand Hotel on the 15th inst. The President (Mr. George Martin) occupied the chair. The loyal toasts having been submitted and duly honoured, Mr. C. W. Keep proposed "The Trade and Commerce of the Borough," to which Mr. William Hoare responded. The next toast—"The Mayor, Corporation, and Borough Officials" was entrusted to Mr. Fogerty, the Mayor and Councillor Doulsin responding. Mr. G. Shears gave the toast of "Kindred Associations," which was replied to by Messrs. Rashley and Haydon. In submitting the toast of the evening, "The Master Builders' and Decorators' Association," Dr. Hosker said that he was sure that as an association they were desirous of protecting not only their own interests but of protecting the building trade as between employer and employed in the town. He felt certain that whatever might be their grievances they must feel that they had the respect of the Town Council, but he could never understand how it was that builders and architects were kept off the Building Committee, for they might just as well keep medical men off the Sanitary Committee. Surely the Town Council ought to make up their Committees of gentlemen who thoroughly understood the business before them. He believed that it had been very largely due to the enterprise of the builders of the town that Bournemouth occupied the very high position which it did at the present day. The Chairman, in responding, said that the Association was formed nearly nine years ago, during a time of stress and trouble, through carpenters having made a claim for an advance of wages. They all agreed with Trades Unionism, but they wished that Trades Unions would keep to their legitimate objects. They had no objection to paying a man what he was worth, but they did object to paying a higher rate of wage simply because that man belonged to a Trades Union. Speaking on behalf of the members of the Association, he believed, notwithstanding the bad repute in which builders stood in the minds of some people, that they endeavoured to carry out their undertakings in a legitimate and proper manner and according to the interpretation of the plans and specifications; and the good feeling which existed between the great bulk of architects and builders in the town was evidence of the fact that their efforts in that direction were to a very great extent successful.

OZONE GENERATORS.—Mr. J. Richardson Craig, of Glasgow, has sent us a pamphlet containing descriptions and illustrations of his patent ozone generators. Air is drawn or forced through the generator by means of a fan, and ozone "is produced by the silent discharge of a high-tension electric current." The test by Dr. John Clark, City Analyst, of Glasgow, shows that an appreciable quantity of ozone is generated by the apparatus, and it is said that Dr. John Glaister has expressed his approval of the system. Whether the generator will purify the air of buildings to the degree anticipated by the inventor is a point which can be settled only by a long series of experiments under normal conditions, and these experiments will doubtless be carried out in due course.

CITY POLYTECHNIC.—A scheme framed by the Charity Commissioners provides for the dissolution of the City Polytechnic, which consists of the Birkbeck Institute, the City of London College, and the Northampton Institute, Clerkenwell. The last-named will constitute a separate charity, and will be administered as heretofore pending the settlement of a further scheme by the Commissioners; the two other institutions will be constituted as separate foundations, likewise, pending the issue of further schemes by the Board of Education. Meanwhile the whole of the endowments is to be applied to educational purposes only, and the Birkbeck Institute will change its name to that of Birkbeck College.

PATENTS TO INVENTORS.—Messrs. Percival Marshall & Co. send us a 3d. pamphlet on this subject, written by Mr. A. H. Stanley (Fellow of the Chartered Institute of Patent Agents), which contains short practical directions to those who wish to patent an invention, which, coming from a member of the representative body of Patent Agents, may no doubt be regarded as reliable. It is a pamphlet which intending patentees would do well to get.

CAPITAL AND LABOUR.

STATE OF THE BUILDING TRADES.—Employment in the building trades remained dull in January, and showed little change as compared with a month and a year ago. Returns received through the Trade Correspondent from 53 London employers showed that in the last week of January they paid wages to 9,961 workpeople of all classes, compared with 9,745 in December and 11,127 in January, 1905. Employment generally in London was rather worse than a month ago, and much worse than a year ago. Returns were received from Employers' Associations in 63 districts outside London. In three-fourths of these employment was reported the same as a month ago, and in one-sixth, including Halifax, Birmingham, Swansea, and Aberdeen, it was worse than a month ago. Compared with a year ago, employment was reported worse in 26 towns, and about the same in 30; in 7 it was better.—*Labour Gazette.*

Legal.

SOUTHWARK PARTY WALL DISPUTE.

IN the Chancery Division, on the 21st inst., the hearing of the case of Frederick Betts, Ltd. *v.* Pickfords, Ltd., was concluded before Mr. Justice Kekewich.

In this case the plaintiffs claimed an injunction to restrain the defendants, their servants and agents, from committing any trespass upon the walls of the plaintiffs' warehouse situate in Long-lane, Southwark, erected on land demised by the defendants to the plaintiffs by a lease dated October 28, 1903, and from converting any part of the walls of the warehouse into a party wall, and from doing any act or thing whereby the plaintiffs might be prevented from having the use of the walls of the warehouse as external walls. The plaintiffs further claimed a mandatory injunction restraining the defendants from permitting the walls on the defendants' land at the back of the plaintiffs' warehouse to remain connected with the plaintiffs' warehouse, and in particular from permitting the defendants' walls to remain so erected in such a way as to cause the wall at the back of the plaintiffs' warehouse, or any part thereof, to be a party wall, or to be other than an external wall, and directing or requiring the defendants to disconnect the walls on their land at the back of the plaintiffs' warehouse from the walls of the plaintiffs' warehouse where they had been connected by the defendants, and directing and requiring the defendants to restore the wall of the plaintiffs' warehouse to the state it was in before any such connexion was made. Plaintiffs also asked for an injunction restraining defendants from doing any act which might prevent or hinder the plaintiffs from enjoying their warehouse and the lights and windows at the back thereof according to the rights of the plaintiffs under the demise in the lease according to the terms and intention of the lease. There was also a claim for damages.

Mr. P. Ogden Lawrence, K.C., and Mr. R. J. Parker appeared for the plaintiffs; and Mr. Stewart Smith, K.C., and Mr. Leveson for the defendants. The facts of the case sufficiently appear from the following judgment.

His lordship, in giving judgment, said that the case arose in these circumstances. The plaintiffs were lessees of the defendants under a deed of October 28, 1903, which was a lease of land which at that time had some buildings upon it. The lease contained a covenant by the lessees to erect buildings of a certain description according to approved plans, those plans being in existence, and there being no doubt what they were. These plans showed a certain number of windows. They knew from the evidence that the plaintiffs stipulated for these windows, and that they stipulated for them for a certain purpose, and that the defendants knew why that stipulation was made. But he put that aside because it was sufficient for him to know that as a matter of fact the bargain between the two parties was that the plaintiffs should erect buildings containing certain windows, the windows being an essential part of the approved plans. Therefore he thought that the special purpose for which the windows were required became immaterial. Then it was said that the defendants had acted in derogation of the grant and especially as regarded the grant of the windows, the right to open those windows, and the privilege of having light coming through them by what they had done. What the defendants were said to have done was this: The plaintiffs said that defendants by their acts had converted what ought to have been an external wall into a party wall within the meaning of sect. 5, sub-sect. 16, of the London Building Act, 1894, and the result of that was that the local authority was competent to demand, and it had demanded, these windows should be shut up. It was unnecessary to go into the question as to what was the foundation of the local authority's demand except that they said that if the wall was used as a party wall the windows could not be allowed to remain. It was said that that was a derogation from the defendants' grant. Assuming that what the defendants had done had made a party wall where it ought not to be, then they had led directly to the local authority's demand, which must be complied with, and so in that they seemed to his lordship to have acted in derogation of their own grant. He had said there was evidence to show that a special business was in contemplation, and that the windows were required by the plaintiffs for that business to the knowledge of the defendants. But he did not go on that. The defence was that you must regard any alleged derogation of grant with reference to all the circumstances under which the grant was made. What the defendants said was that the plaintiffs accepted the lease

with the obligation of building according to the plans, knowing that they were bound to build a wall separating the demised premises from the adjoining premises retained by the lessors, and that they must be taken to have known that there would be necessarily this external wall which must become a party wall. Defendants said that the plaintiffs knew there were to be buildings the other side, and must have known that when the buildings were erected the dividing wall, at any rate, in all probability would become a party wall. Therefore, said the defendants, they must be taken to have made the grant or entered into the implied obligation derived from the lease with the knowledge that there would probably be set up a party wall, and that if there was a party wall the consequence would follow that the windows they had guaranteed could not be made. In the first place, he was not sure whether the plaintiffs ought to be treated as contemplating the existence of a party wall. He would take it that plaintiffs contemplated defendants would erect buildings, but he saw no reason for concluding that plaintiffs knew that defendants would use their wall so as to make it a party wall. The next thing the defendants said was that they had to clear the ground by virtue of a contemporaneous agreement with the lease, and when they came to do that they found overhanging the demised ground some beams which belonged to the remaining building which to some extent had to be pulled down in order to clear the ground. Defendants said they did not take them away, but with the consent of the plaintiffs' architect they were allowed to be built into their wall. The same was true of the stanchions and purlins left on the ground on the plaintiffs' side of the wall. Defendants said they were willing that they should be built into the wall, and that they did not want to remove them. They said they had done nothing by which they could be treated as trespassers. To his lordship's mind defendants were using the property they had demised to the plaintiffs and occupied it for their stanchions and purlins, and in respect of which the plaintiffs were entitled to relief. They were using the plaintiffs' property for unauthorised purposes which seemed to be a trespass the court could remedy. Then, defendants said that if they did it they did it with authority. All that could be said to support that was that plaintiffs' architect and defendants' architect agreed between them that the purlins and stanchions should be built into the wall. But plaintiffs' architect did not communicate that to his clients, and allowing that to be done was clearly outside the scope of his authority. He had no authority to allow the slightest deviation from the plans. There was only one other important question. Down below the ground on the other side of the wall in question were stables used by the defendants, and they used the wall between their stables and the plaintiffs' premises, the wall being on the plaintiffs' ground. That might or might not make it a party wall, but he did not decide that. He would assume that using it in that way was using it as a party wall. If the defendants desired to use the adjoining premises for stables or any other purpose they could make their own retaining wall. They had no business to use the plaintiffs' wall. As soon as the plaintiffs knew of it they protested and said it must not be used in that way. There was a question raised about a breach of the covenant for quiet enjoyment in the lease, but his lordship did not think there had been any breach. He need not say anything more about that, because he gave the plaintiffs what he thought was right on the other ground. In the result, his lordship granted an injunction in the terms of claim 1 of the statement of claim, viz., restraining the defendants from injuring or committing any trespass upon the walls of the plaintiffs' warehouse, and from converting any part of the walls of the warehouse into a party wall, and from doing any act or thing whereby the plaintiffs might be prevented from having the use of the walls of the warehouse as external walls. He also granted the plaintiffs an inquiry as to damages and gave them the costs of the action.

ACTION AGAINST AN ARCHITECT AND SURVEYOR.

THE case of Southorn *v.* Wakerley came before Mr. Justice Farwell in the Chancery Division on the 13th and 14th insts., an action by the plaintiff, Mr. Henry H. Southorn, of Leicester, against Mr. Arthur Wakerley, an architect and surveyor, of the same town, to set aside an agreement of sale by the defendant to the plaintiff of a piece of building land.

Mr. C. E. Jenkins, K.C., and Mr. T. K. Crossfield appeared for the plaintiff; and Mr. W. H. Upjohn, K.C., and Mr. Wurtzburg for the defendant.

It appeared from the statement of Mr. Jenkins that the plaintiff claimed to set aside the sale to him by the defendant of a piece of building land forming part of a building estate known as the Evington-road estate at Leicester on the ground that it was subject to a right of way across it of which the plaintiff had no knowledge and which was not communicated to him by the defendant. The defendant had acquired this building estate and got out plans and particulars showing the road or roads made or proposed to be made, and the plots into which it was divided, and he advertised it as a building estate and represented to the plaintiff that it was suitable for building purposes. The purchase having been completed, and the conveyance executed, the plaintiff entered into a building agreement with a Mr. Skillington to erect a private dwelling-house, with stabling and other buildings, upon the building plot. The house and buildings were commenced and the building operations were continued until April 7 last, when the walls had been raised to the height of several feet. On April 7 several men acting on behalf of the owner of an estate adjoining the Evington-road estate entered the building plot, pulled down part of the dwelling-house and buildings in course of erection, and drove a horse and cart over a portion of the building plot, including the site of the dwelling-house and buildings, and back again, alleging and claiming that this gentleman, as owner of the adjoining estate, had a right of way over a portion of the building plot, including the site of the dwelling-house. It appeared that the right of way claimed had existed for many years, and by reason of that right of way the plaintiff's building plot was not capable of being built upon as proposed and the work under the building agreement had to be discontinued. The plaintiff accordingly brought the present action, claiming repayment by the defendant of the money paid by him with interest and a declaration that he was entitled to a lien on the building plot for the said moneys and interest.

After hearing the evidence of the defendant and other witnesses, his lordship held that the plaintiff had not proved his case, and dismissed the action with costs.

CLAIM THROUGH DEFECTIVE SCAFFOLDING.

THE case of Tozeland *v.* The West Ham Union came before a Divisional Court of King's Bench, composed of the Lord Chief Justice and Justices Ridley and Darling, on the 14th inst., on the appeal of the plaintiff from a decision of the judge of the Shoreditch County Court.

The short facts of the case were as follows:—Tozeland, a box-maker by trade, was a pauper inmate of the defendants' workhouse, and upon the electrical engineer asking for an assistant to do some work was assigned to do it by the labour master. In order to execute his work plaintiff had to go upon a scaffold, which was held by the said County Court judge to have been negligently constructed, and in consequence plaintiff sustained a fall, and was so injured that one of his legs had to be amputated. The plaintiff claimed 100*l.* damages, which the County Court judge held to be proper damages, but although holding in the plaintiff's favour on every other point the learned judge came to the conclusion that he could not recover because he was in a common employment with the person responsible for the erection of the defective scaffolding.

Mr. Wallace, K.C., and Mr. Abinger, appeared for the appellant; and Mr. Avory, K.C., and Mr. S. Lynch, for the respondents.

In the result, the Lord Chief Justice, in giving judgment, said it appeared to him that the County Court judge overlooked the broad consideration which was at the root of the common employment doctrine, viz.—that the servant had an option of entering into the contract or refusing employment. The plaintiff if he did not do this work was subject to punishment. He thought the appeal should be allowed and judgment entered for the plaintiff for 100*l.*

Justices Ridley and Darling concurred, and the appeal was accordingly allowed with costs.

PATENTS OF THE WEEK.

APPLICATIONS PUBLISHED.*

2,405 of 1905.—C. E. LONG: *Latch or Latch Lock for Doors, Hinged Panels, Sliding Partitions, and such like.*

This relates to a pivoted or swinging bar latch, provided with a key operated mechanism for locking it in its fastened position, and consists in arranging the said key operated mechanism as a part of the stationary pivot or mounting for the swinging bar, and providing the said bar so that it can be engaged by the bolt of the said mechanism when in its fastening position, the said bar thereby not having as part of it any of the key operated mechanism.

5,248 of 1905.—D. M. NESBIT and ASHWELL & NESBIT, LTD.: *Radiators.*

This relates to a radiator for heating buildings and like purposes, and consists in having a baffle plate placed longitudinally between the radiator columns so that the air to be heated is spread over the surface of the radiator columns and thereby thoroughly heated.

5,428 of 1905.—W. H. TURNER: *An Appliance to Regulate the Supply of Water to Water Waste Preventing or other Cisterns or the like.*

This relates to an appliance to regulate the supply of water to water waste preventing or other cisterns or the like, and consists of a ball lever made in two parts, one being connected to and above the other part by means of a pin at one end, and provided with a regulating screw passing through a slot in the upper part into a hole tapped to receive it in the lower part, the end being enlarged to allow for hole in same. The two parts when adjusted form one lever.

5,513 of 1905.—R. ZELLENKA: *A Cementing Material and the Manufacture of the same.*

This relates to the manufacture of cementing materials such as have hitherto been composed of sulphur melted to a thin liquid, sand, reduced iron, and colouring matter, and consists in the use of ferriferous sand foundries or sand from iron or steel fettling or the like operations, in lieu of ordinary sand and reduced iron.

7,372 of 1905.—W. A. MCCORMICK: *Siphon Flushing Cisterns.*

This relates to a flushing device having an oscillatory plunger, and consists in the combination of a wide sunk portion to the chamber forming the lowest portion of a cistern, and a siphon communicating with that sunk portion of the chamber and opening into same, so that water can only pass into the siphon one way.

7,502 of 1905.—F. GRIFFITHS: *Flushing Cisterns for Water-closets, Urinals, and like purposes.*

This relates to a siphon-flushing apparatus, and consists in the combination with a main cistern filled from the supply valve, and a supplementary cistern filled by the water overflowing into it from the other, of a non-return valve in the bottom of the supplementary cistern arranged to enable water to be emptied from it into the other when the siphoning action is started, and to prevent it running back, and a secondary overflow in the wall of the main cistern slightly above the ordinary one, and a siphon, the under side of whose bend that leads to the outlet pipe or discharge being slightly above the secondary overflow but below the top of the cistern.

8,356 of 1905.—DORRATOR CO., LTD., W. W. MORRISON, and J. BAIRD: *Fire Grates.*

This relates to a fire grate, and consists in the combination therewith of side standards with frontal stops and oblique slots, each slot having two pockets, a firebreast with side pins and frontal spurs united to a bottom grate, the grate and breast being adapted for simultaneous oscillation within the fireplace, an ash pit frame with ledges and bottom closed by a damper, a front plate having a fresh-air damper opening, and a hopper containing trivet seats and a trivet with pendant prongs.

11,719 of 1905.—J. ALTY: *Water Waste Preventing Valveless Siphon Cistern for the Flushing of Water-closets and the like.*

This relates to a water waste preventing valveless siphon cistern for the flushing of water-closets and the like, and consists in the introduction of an upper dome top cylinder, and the method of connecting the discharge outlet of the cylinder to the centre of the same, by which means or arrangement a better water way is given to the siphon and which arrangement also reduces the friction in the flow of the water.

13,644 of 1905.—W. J. BEASLEY: *An Iron Drain Pipe Stopper.*

This relates to an iron drain pipe stopper, and consists of a stopper or plug of a thickness and diameter made to fit the standard sizes of earthenware and iron drain and other pocketed pipes, and which is cast in one piece of a specially tapered form, the thicker end being surmounted by an inverted groove of a section suitable to the size of the plug. The upper or outer surface of the plug is provided with a square stud, which may be either cast on with the plug or otherwise screwed in position as may be most convenient, to which is attached by a suitable bolt and washers a spring lever.

14,416 of 1905.—N. BURGER: *Pneumatic Door Closing Apparatus.*

This relates to a pneumatic door closing apparatus and is characterised by the use of two pistons in two separate cylinders mounted on one base, the main piston being coupled by means of a lever and a toothed segment, provided on one end of the said lever, and the side piston formed as a rack and acted upon by a spiral spring, which can be regulated by a screw. When the door is opened the lever connected by a rod with the door is swung round, whereby the main piston draws forward, and presses back by means of the toothed segment, the side piston at the same time compressing the spiral spring while the automatic closing of the door is effected by the spiral spring acting upon the piston which springs back the

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

lever by turning the toothed segment and thereby pushes back the air piston to its former position.

18,162 of 1905.—A. BELL: *Fireplaces having Circulating Hot-water Boilers.*

This relates to a fireplace having a circulating hot-water boiler, and consists in the combination with such boiler of a setting adapted to receive the grating, and having a chamber formed therein with inclined back and removable door.

18,572 of 1905.—J. DELPORTE: *Roof Framings.*

This relates to a roof framing of the Raikem type wherein the two sides or slopes to each ridge are supported upon a triangular beam composed of three stays connected together by bracing.

19,929 of 1905.—A. BELL: *Kitchen Range Fittings and their Attachments.*

This relates to kitchen range fittings and their attachments, and consists in making the hinges and latches or other similar parts as plain in shape as convenient, and forming at the rear side of said parts one or more bosses or projections, which shall pass through holes formed in that part of the door or grate to which they are to be attached. In these said bosses holes are drilled and tapped so that upon the inner side a pin and washer may be employed to secure the said fittings firmly thereto.

22,920 of 1905.—A. H. MARTEL: *Travelling Greenhouses.*

This relates to a travelling greenhouse, and consists of concrete walls formed of spaced blocks of concrete having grooved sides to receive the ends of a connecting valve of concrete, and of means for keeping out the draught, the said means consisting of a plate of metal placed between the castings carrying the wheels on which the greenhouse travels.

1,554 of 1905.—R. T. HUNTER: *Methods of Construction as Applied to Roofing and other Structural Purposes.*

This relates to the construction of roofs, walls, and the like structural work and consists in the combination with principals or main rafters consisting of rolled girders, of sheathing with scroll-shaped dependent extensions adapted to be threaded thereon and panels or tiles interlocked therewith, by means of returned edges.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum (52 numbers) PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," Catherine-street, W.C.

SUBSCRIBERS in LONDON and the SUBURBS, by prepaying at the Publishing Office 19s. per annum (52 numbers) or 4s. 9d. per quarter (13 numbers), can ensure receiving "The Builder" by *Friday Morning's Post.*

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

February 9.—By SPELMANS' (at Norwich).

Norwich.—Castle-st., freehold shop and warehouse, area 5,680 ft.. y.r. 126*l.* £2,400

February 10.—By STEPHENSON & ALEXANDER (at Cardiff).

St. Hilary, Glamorgan.—"The Glebe Farm," 46 a. 3 r. 15 p., f. 2,345

February 13.—By C. W. DAVIES & SON.

City-road.—4, Sudeley-st., u.t. 20½ yrs., g.r. 5*l.*, e.r. 36*l.* 230

Finchley.—Chambers-gdns., two plots of land, f. 105

By DIXON & CO.

Norwood.—83 and 83A, Denmark-rd., f., w.r. 41*l.* 12s. 365

By DRIVERS'.

Stoke Newington.—1, 2, and 3, The Pavement (s.), u.t. 82½ yrs., g.r. 18*l.*, y.r. 114*l.* 1,320

By WHEELER BROS.

Chelsea.—69 and 71, Lower Sloane-st. (s.), u.t. 56½ yrs., g.r. 20*l.*, y.r. 190*l.* 2,520

13 and 15, Sydney-st., f., y.r. 110*l.* 2,445

Sydney-st., f.g.r. 5*l.*, reversion in 18½ yrs..... 460

Fulham.—21, Musgrave-cres., u.t. 81½ yrs., g.r. 5*l.* 14s., p. 450

By FLEURET, SONS, ADAMS (at Masons' Hall Tavern).

New Barnet, Herts.—Lancaster-rd., the "Duke of Lancaster" p.h., f., p. (including goodwill)..... 6,400

Southend, Essex.—Alexandra-st., the "Alexandra Hotel," u.t. 16½ yrs., y.r. 350*l.* (including goodwill)..... 3,020

February 14.—By H. DONALDSON & SONS.

Dalston.—155 and 157, Queen's-rd., u.t. 13½ yrs., g.r. 16*l.*, y.r. 93*l.* 360

15, 17, 19, and 21, Shrubland-gr., u.t. 23 yrs., g.r. 4*l.*, y.r. 122*l.* 880

162, Richmond-rd., u.t. 32½ yrs., g.r. 2*l.* 2s. 6d., y.r. 42*l.* 350

82, Graham-rd., u.t. 53 yrs., g.r. 5*l.*, y.r. 40*l.* 380

8, Blomfield-st., u.t. 31½ yrs., g.r. 5*l.*, y.r. 32*l.* 200

4, Parkholme-rd., u.t. 45 yrs., g.r. 13*l.* 17s., p. 670

Kingsland.—19, Hayling-rd., u.t. 67 yrs., g.r. 5*l.* 10s., y.r. 30*l.* 300

By EDWIN EVANS.

Ashford, Kent.—Canterbury-rd., freehold building land, area half an acre 150

By A. PREECE & SON.

Croydon.—2, Canning-rd., u.t. 58½ yrs. g.r. 10*l.* 10s., e.r. 48*l.* 350

Beckenham.—87 and 101, Elmers End-rd. (s.), u.t. 94½ yrs., g.r. 18*l.*, y.r. 85*l.* 800

By FIELD & SONS.

Bermondsey.—34, Beatrice-rd., u.t. 32½ yrs., g.r. 5*l.*, w.r. 36*l.* 8s. £245

By G. F. HARRINGTON.

Clapham.—Jeffreys-rd., f.g.r. 12*l.*, reversion in 54 yrs. 320

72, Jeffreys-rd., f., p. 690

Norbiton, Surrey.—26 to 32 (even), Washington-cottages, f., w.r. 67*l.* 12s. 590

Rotherhithe.—55 to 61 (odd), Union-rd., u.t. 46 yrs., g.r. 11*l.* 15s. 6d., w.r. 166*l.* 8s. 1,130

Battersea.—32 to 52 (even), Kerrison-rd., u.t. 72 yrs., g.r. 55*l.*, w.r. 386*l.* 2s. (in lots) 3,005

9 and 15, Kerrison-rd., u.t. 72 yrs., g.r. 10*l.* 10s., w.r. 70*l.* 4s. 595

Clapham.—1, 3, 9, and 13, Hethermgton-rd., u.t. 60½ yrs., g.r. 32*l.* 10s., y.r. 158*l.* 1,530

Battersea.—175 and 179, Stewarts-rd., u.t. 58 yrs., g.r. 10*l.* 10s., y.r. 62*l.* 8s. 490

Kennington.—86, Royal-rd., u.t. 44 yrs., g.r. 5*l.*, y.r. 30*l.* 295

Brixton.—40 to 44, Trinity-sq., u.t. 22 yrs., g.r. 18*l.*, y.r. 174*l.* 8s. 890

Clapham.—28, 30, 32, 50, and 52, Gaskell-st., u.t. 56 yrs., g.r. 18*l.* 15s., w.r. 162*l.* 10s. .. 1,540

By DOUGLAS YOUNG & CO.

South Lambeth.—36 to 42 (even), Lansdowne-gdns., u.t. 36½ yrs., g.r. 36*l.*, e.r. 200*l.* 1,400

Tooting.—2, Foubert-rd., u.t. 77 yrs., g.r. 9*l.*, e.r 48*l.* 455

By DEBENHAM, TEWSON, & CO., with MATTHEWS, MATTHEWS, & CO. (at Winchester House).

Woolwich, Kent.—23 and 25, New-rd. (s.), f., e.r. 120*l.* 2,300

Plumstead-rd., f.g.r. 40*l.*, reversion in 26½ yrs. 1,225

44, 45, and 46, Plumstead-rd. (s.), f., y.r. 90*l.* 1,395

Plumstead-rd., f.g.r. 2*l.*, reversion in 30½ yrs. 520

48, 49, 50, 53, and 54, Plumstead-rd. (s.), f., y.r. 138*l.* 2,240

55 and 56, Plumstead-rd. (s.), f., e.r. 100*l.*..... 1,100

New-rd., "The Fortune of War" p.h., f.g.r. 120*l.*, reversion in 58½ yrs. 3,000

Wilmount-st., f., workshop or warehouse, e.r. 25*l.* 390

Frederick-pl., "The Freemasons' Arms" p.h., etc., f.g.r. 22*l.* 5s., reversion in 16 and 11½ yrs. 3,500

Maxey-rd., The Baptist Tabernacle, etc., f.g.r. 6*l.* 12s., reversion in 54 yrs. 155

Plumstead, Kent.—Blendon-rd., "Bramblebury Cottage," f., y.r. 25*l.* 755

Blendon-rd., f.g. rents 45*l.* 10s., reversion in 49½ yrs. 1,390

Heavitree-rd., f.g. rents 80*l.* 6s. 9d., reversion in 41½ and 49½ yrs. 2,810

Bramblebury-rd., f.g. rents 116*l.* 18s. 6d., reversion 39 to 48 yrs. 3,480

Bramblebury-rd., a plot of land, 0 a. 2 r. 8 p., f. 160

Durham-rd., f.g. rents 42*l.*, reversion in 35½ and 36½ yrs. 1,430

Bramblebury-rd., f.g. rents 73*l.* 19s. 6d., reversion 36 to 42½ yrs. 2,350

Heavitree-rd., f.g. rents 34*l.* 12s., reversion in 42½ yrs. 1,130

Burwash-rd., f.g. rents 76*l.* 16s., reversion in 42½ yrs. 2,380

Durham-rd., f.g.r. 16*l.* 16s., reversion in 38 yrs. 560

Burwash-rd., f.g. rents 77*l.* 4s., reversion in 42½ yrs. 2,320

Heavitree-rd., f.g. rents 50*l.* 14s., reversion 24 to 48 yrs. 1,490

Waverley-rd., f.g. rents 56*l.* 0s., reversion 19½ to 43½ yrs. 2,400

Durham-rd., f.g. rents 70*l.* 10s., reversion 21½ to 36 yrs. 2,720

Majendie-rd., f.g.r. 29*l.*, reversion in 43½ yrs. 760

Brewery-rd., f.g.r. 16*l.* 10s., reversion in 39½ yrs. 500

Earl-st., f.g.r. 19*l.*, reversion in 37½ and 43½ yrs. 590

Robert-st., f.g.r. 16*l.*, reversion in 38½ yrs.... 510

By FURBERS' (at Ascot).

Winkfield, Berks.—1 and 2, Cambridge-cottages, f., w.r. 24*l.* 14s. 235

February 15.—By GLASIER & SONS.

Fulham.—Winchendon-rd., f.g. rents 56*l.*, reversion in 87½ yrs. 1,430

By HAROLD GRIFFIN.

Battersea.—98 and 100, Maysoule-rd., u.t. 72 yrs., g.r. 10*l.*, w.r. 70*l.* 4s. 390

By PEASGOOD & SPIERS.

Anerley.—38, Elmers End-rd., u.t. 87½ yrs., g.r. 4*l.*, y.r. 28*l.* 285

By PRICKETT & ELLIS.

Highgate.—2 to 12 (even), Wembury-rd., f., y.r. 240*l.* 3,100

4, Northwood-rd., f., y.r. 38*l.* 460

Archway-rd., f.g. rents 107*l.* 2s., reversion in 82 yrs. 2,780

50, 52, and 58, Archway-rd. (s.), f., y.r. 200*l.* 3,200

February 16.—By A. & A. FIELD.

Stepney.—138 to 152 (even), Stepney-green, u.t. 40½ yrs., g.r. 33*l.* 12s., w.r. 387*l.* 12s. 2,550

1 to 6, Tillotson-st., u.t. 40½ yrs., g.r. 22*l.* 10s., w.r. 229*l.* 16s. 1,310

By OSBORN & MERCER.

Stoke Newington.—Castle-st., f.g.r. 12*l.*, reversion in 66½ yrs. 290

Castle-st., f.g.r. 22*l.*, reversion in 66½ yrs..... 545

Millard-rd., f.g. rents 116*l.* 10s., reversion in 66½ yrs. 2,825

Shellgrove-rd., f.g. rents 126*l.* 10s., reversion in 66½ yrs. 3,145

Millard-rd., f.g. rents 85*l.* 10s., reversion in 66½ yrs. 2,085

Castle-st., f.g. rents 54*l.*, reversion in 66½ yrs. 1,325

Hayling-rd., f.g. rents 71*l.* 10s., reversion in 66½ yrs. 1,815

Truman's-rd., f.g. rents 49*l.* 10s., reversion in 66½ yrs. 1,235

Hayling-rd., f.g. rents 82*l.* 10s., reversion in 66½ yrs. 2,005

Castle-st., f.g.r. 12*l.*, reversion in 66½ yrs 275

John-pl., f.g.r. 28*l.*, reversion in 66½ yrs. 700

Edmonton.—Sebastopol-rd., f.g.r. 12*l.*, reversion in 47½ yrs. 335

By REYNOLDS & EASON.

Westbourne Park.—33, 35, and 37, Tavistock-cres., u.t. 50½ yrs., g.r. 30*l.*, e.r. 195*l.*..... 1,160

65, Elgin-av. (s.), u.t. 57½ yrs., g.r. 10*l.*, y.r. 87*l.* 6s. 425

67, Elgin-av. (s.), and 48, Chippenham-rd., u.t. 97½ yrs., g.r. 12*l.*, y.r. 101*l.* 710

Lewisham.—26 and 28, Molesworth-st., u.t. 56½ yrs., g.r. 6*l.*, w.r. 55*l.* 18s., ... £325

Old Kent-road.—46, 48, and 50, Culmore-rd., u.t. 40½ yrs., g.r. 15*l.* 2s., y.r. 133*l.*..... 1,010

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; l.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; h.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PUBLISHER'S NOTICES.

Nat. Tel., 6112, Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME LXXXIX. (July to December, 1905) was given as a supplement with the issue of January 13th.

CLOTH CASES for Binding the Numbers are now ready, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 9d. each.

THE EIGHTY-NINTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 3s. 6d. each.

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PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps must not be sent, but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," Catherine Street, W.C.

Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

ADVERTISERS in "THE BUILDER" may have *Replies addressed to the Office*, Catherine Street, Covent Garden, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

N.B.—The Reply Boxes are not intended for trade lists, circulars, and the like; should these be received, they cannot (if noticed) be forwarded.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed) 1s.

MEETINGS.

FRIDAY, FEBRUARY 23.

Architectural Association.—Mr. F. T. Baggallay on "Porches and Approaches." 7.30 p.m.

Royal Institution.—Professor J. Oliver Arnold on "The Internal Architecture of Metals." 9 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. C. H. Sumner on "The Graphical Determination of the Deflection of Beams." 8 p.m.

SATURDAY, FEBRUARY 24.

Architectural Association.—Third Spring Visit, to the Ritz Hotel, Piccadilly. 2 p.m.

Builders' Foremen and Clerks of Works' Institution.—Annual Dinner, King's Hall, Holborn Restaurant. 5.30 p.m.

Royal Institution.—Mr. M. H. Spielmann, F.S.A., on "George Frederick Watts, as a Portrait Painter," II. 3 p.m.

MONDAY, FEBRUARY 26.

Surveyors' Institution.—Paper by the late J. Leaning, to be read by Mr. H. J. Leaning, on "The Assimilation of the Practice of Quantity Surveyors." 8 p.m.

Society for the Encouragement of the Fine Arts.—Mr. C. E. Keyser, F.S.A., on "Two Churches in Berkshire," etc., lantern illustrations. 8 p.m.

TUESDAY, FEBRUARY 27.

Institution of Civil Engineers.—Papers to be further discussed:—(1) "A Plea for Better Country Roads" by Mr. G. R. Jebb; (2) "Country Roads for Modern Traffic" by Mr. J. E. Blackwall, B.A. 8 p.m.

WEDNESDAY, FEBRUARY 28.

Architectural Association Discussion Section.—Mr. E. C. M. Willmott on "Shop Fronts." 7.30 p.m.

Northern Architectural Association.—Mr. J. B. Mitchell-Withers on "Early XVIIIth Century Architecture," lantern illustrations. 7.30 p.m.

Institution of Civil Engineers.—Students' Visit to the works of Messrs. Joseph Westwood & Co., Ltd., Napier-yard, Millwall. 2.40 p.m.

Institute of Sanitary Engineers (Students' Lectures).—Mr. N. W. Hoskins on "Materials in Sanitary Work," II. 7 p.m.

Society of Arts.—Captain G. S. C. Swinton, L.C.C., on "London Traffic." 8 p.m.

THURSDAY, MARCH 1.

Carpenters' Company, Carpenters' Hall (Lectures on Matters Connected with Building).—The Rt. Hon. Jame

Bryce, M.P., F.R.S., on "The Relation of Architecture to History." 8 p.m.

Birmingham Builders' Exchange.—Mr. J. Miller Carr on "Architectural Ceramics." 6 p.m.

FRIDAY, MARCH 2.

Royal Institution.—Dr. R. Caton, F.R.C.P., on "Hippocrates and the Newly-Discovered Health Temple at Cos." 9 p.m.

Junior Institution of Engineers (Westminster Palace Hotel).—(1) Paper on "Acceleration and Accelerometers" by Mr. A. P. Trotter, B.A., Electrical Adviser to the Board of Trade, 7 p.m.; (2) Paper on "Gas Engine Indicators" by Mr. L. F. de Peyrecave, Stud. Inst. C.E., 8 p.m.

SATURDAY, MARCH 3.

Royal Institution.—Professor J. J. Thomson on "The Corpuscular Theory of Matter," I. 3 p.m.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks	1 7 0	per 1000 alongside, in river.
Rough Stocks and Grizzles	1 4 0	„ „ „
Picked Stocks for Facings	2 15 0	„ delivered.
Flettons	1 5 0	„ at railway depôt.
Red Wire Cuts	1 11 0	„ „ „
Best Fareham Red	3 12 0	„ „ „
Best Red Pressed Ruabon Facing	3 0 0	„ „ „
Best Blue Pressed Staffordshire	3 15 0	„ „ „
Do. Bullnose	4 0 0	„ „ „
Best Stourbridge Fire Bricks	3 14 0	„ „ „
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	12 0 0	„ „ „
Headers	11 0 0	„ „ „
Quoins, Bullnose, and Flats	16 0 0	„ „ „
Double Stretchers	19 0 0	„ „ „
Double Headers	16 0 0	„ „ „
One Side and two Ends	19 0 0	„ „ „
Two Sides and one End	20 0 0	„ „ „
Splays, Chamferred, Squints	20 0 0	„ „ „
Best Dipped Salt Glazed Stretchers, and Header	12 0 0	„ „ „
Quoins, Bullnose, and Flats	14 0 0	„ „ „
Double Stretchers	15 0 0	„ „ „
Double Headers	14 0 0	„ „ „
One Side and two Ends	15 0 0	„ „ „
Two Sides and one End	15 0 0	„ „ „
Splays, Chamferred, Squints	14 0 0	„ „ „
Second Quality White and Dipped Salt Glazed	2 0 0	„ less than best.

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	„ „
Best Portland Cement	25 0	per ton, „
Best Ground Blue Lias Lime	19 0	„ „

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime	11s. 0d. per yard, delivered.
Stourbridge Fireclay in sacks	27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	„ „
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	„ „
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	„ „

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. depôt.
Beer „	1 6	„ „
Greenshill „	1 10	„ „
Darley Dale in blocks	2 4	„ „
Red Corsehill „	2 2	„ „
Closeburn Red Freestone	2 0	„ „
Red Mansfield „	2 4	„ „
YORK STONE—*Robin Hood Quality.*		
Scappled random blocks.	2 10	„ „
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super., „
6 in. rubbed two sides ditto, ditto	2 6	„ „
3 in. sawn two sides slabs (random sizes)	0 11½	„ „
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	„ „
1½ in. to 2 in. ditto, ditto	0 6	„ „
HARD YORK—		
Scappled random blocks.	3 0	per ft. cube, „
in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super., „
6 in. rubbed two sides ditto	3 0	„ „
3 in. sawn two sides slabs (random sizes)	1 2	„ „
2 in. self-faced random flags	0 5	„ „

STONE (continued).

	s. d.	
HARD YORK (*continued*)—		
Hopton Wood (Hard Bed) in blocks	2 0	per ft. cube, deld. rly. depôt.
„ „ „ 6 in. sawn both sides landings	2 7	per ft. super. deld. rly. depôt.
„ „ „ 3 in. sawn both sides random slabs	1 0	„ „
„ „ „ 2 in. do.	0 8½	„ „

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r. d.
20×12 „ „	13 17 6	„ „
20×10 first quality „	13 0 0	„ „
20×12 „ „	13 15 0	„ „
16×8 „ „	7 5 0	„ „
20×10 best blue Portmadoc	12 12 6	„ „
16×8 „ „	6 12 6	„ „
20×10 best Eureka unfading green	15 17 6	„ „
20×12 „ „	18 7 6	„ „
18×10 „ „	13 5 0	„ „
16×8 „ „	10 5 0	„ „
20×10 permanent green	11 12 6	„ „
18×10 „ „	9 12 6	„ „
16×8 „ „	6 12 6	„ „

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000 at rly. depôt.
Hip and Valley tiles	3 7	per doz. „
Best Broseley tiles	50 0	per 1000 „
Do. Ornamental tiles	52 6	„ „
Hip and Valley tiles	4 0	per doz. „
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 „
Do. Ornamental do.	60 0	„ „
Hip tiles	4 0	per doz. „
Valley tiles	3 0	„ „
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 „
Do. Ornamental do.	54 6	„ „
Hip tiles	4 1	per doz. „
Valley tiles	3 8	„ „
Best "Rosemary" brand plain tiles	48 0	per 1000 „
Best Ornamental tiles	50 0	„ „
Hip tiles	4 0	per doz. „
Valley tiles	3 8	„ „
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 „
Do. pressed	47 6	„ „
Do. Ornamental do.	50 0	„ „
Hip tiles	4 0	per doz. „
Valley tiles	3 6	„ „

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13 10 0	... 15 0 0
Deals: best 3 by 9	13 0 0	... 14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	... 12 0 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	„ „
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	... 10 0 0
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	... 9 10 0
Foreign Sawn Boards—		
1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	„

	At per load of 50 ft.	
Fir timber: best middling Danzig or Memel (average specification)	4 10 0	... 5 0 0
Seconds	4 0 0	... 4 10 0
Small timber (8 in. to 10 in.)	3 12 6	... 3 15 0
Small timber (6 in. to 8 in.)	3 0 0	... 3 10 0
Swedish balks	2 10 0	... 3 0 0
Pitch-pine timber (30 ft. average)	3 5 0	... 3 15 0

JOINERS' WOOD.	At per standard.	
White Sea: first yellow deals, 3 in. by 11 in.	24 0 0	... 25 0 0
3 in. by 9 in.	22 0 0	... 23 0 0
Battens, 2½ in. and 3 in. by 7 in.	16 10 0	... 18 0 0
Second yellow deals, 3 in. by 11 in.	18 10 0	... 20 0 0
„ „ 3 in. by 9 in.	17 10 0	... 19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	... 14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	... 15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	... 12 0 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	... 22 10 0
Do. 3 in. by 9 in.	18 0 0	... 19 10 0
Battens	13 10 0	... 15 0 0
Second yellow deals, 3in. by 11in.	16 0 0	... 17 0 0
Do. 3 in. by 9 in.	14 10 0	... 16 0 0
Battens	11 0 0	... 12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	... 14 0 0
Do. 3 in. by 9 in.	12 10 0	... 14 0 0
Battens	10 0 0	... 11 0 0
White Sea and Petersburg—		
First white deals, 3 in. by 11 in.	14 10 0	... 15 10 0
„ „ 3 in. by 9 in.	13 10 0	... 14 10 0
Battens	11 0 0	... 12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	... 14 10 0
„ „ 3 in. by 9 in.	12 10 0	... 13 10 0
„ „ battens	10 0 0	... 11 0 0
Pitch-pine: deals	16 10 0	... 20 0 0
Under 2 in. thick extra	0 10 0	... 1 0 0
Yellow Pine—First, regular sizes	44 0 0	upwards.
Oddments	0 0	„
Seconds, regular sizes	33 0 0	„
Yellow Pine oddments	28 0 0	„
Kauri Pine—Planks, per ft. cube	0 3 6	... 0 5 0
Danzig and Stettin Oak Logs—		
Large, per ft. cube	0 3 0	... 0 3 6
Small „ „	0 2 6	... 0 2 9
Wainscot Oak Logs, per ft. cube	0 5 0	... 0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 8	... 0 0 9
¾ in. do. do	0 0 7	... —

WOOD (continued).

JOINERS' WOOD (*continued*)—	At per standard. £ s. d.	£ s. d.
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	... 0 1 0
Selected, Figury, per ft. super. as inch	0 1 6	... 0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10	... 0 1 0
Teak, per load	17 0 0	... 22 0 0
American Whitewood Planks, per ft. cube	0 4 0	... 0 5 0
Prepared Flooring, etc.—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	... 0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	... 0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	... 1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	... 0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	... 0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	... 0 16 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0	... 0 13 6
1 in. by 7 in. „ „	0 14 0	... 0 18 0
¾ in. by 7 in. white „ „	0 10 0	... 0 11 6
1 in. by 7 in. „ „	0 12 9	... 0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	7 0 0	... 7 10 0
Compound Girders, ordinary sections	9 0 0	... 10 0 0
Steel Compound Stanchions	12 0 0	... 13 0 0
Angles, Tees, and Channels, ordinary sections	9 0 0	... 10 0 0
Flitch Plates	9 0 0	... 10 0 0
Cast Iron Columns and Stanchions including ordinary patterns	7 10 0	... 8 10 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	8 0 0	... 8 10 0
Staffordshire Crown Bars, good merchant quality	8 10 0	... 9 0 0
Staffordshire "Marked Bars"	10 0 0	... —
Mild Steel Bars	8 15 0	... 9 0 0
Hoop Iron, basis price	9 5 0	... 9 10 0
„ „ Galvanised	17 0 0	... —

(*And upwards, according to size and gauge.)

Sheet Iron Black—		
Ordinary sizes to 20 g.	9 10 0	... —
„ „ 24 g.	10 10 0	... —
„ „ 26 g.	12 0 0	... —
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	14 0 0	... —
Ordinary sizes to 22 g. and 24 g.	14 10 0	... —
„ „ 26 g.	15 0 0	... —
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	17 0 0	... —
„ „ 22 g. and 24 g.	17 10 0	... —
„ „ 26 g.	19 0 0	... —
Galvanised Corrugated Sheets—		
Ordinary sizes 6 ft. to 8 ft. 20 g.	13 10 0	... —
„ „ 22 g. and 24 g.	14 0 0	... —
„ „ 26 g.	15 5 0	... —
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	11 10 0	... —
Best Soft Steel Sheets, 22 g. & 24 g.	12 10 0	... —
„ „ 26 g.	14 15 0	... —
Cut Nails, 3 in. to 6 in.	9 10 0	... 9 15 0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Per ton, in London. £ s. d.	£ s. d.
LEAD—Sheet, English, 3lb. and up.	18 15 0	... —
Pipe in coils	19 5 0	... —
Soil pipe	21 15 0	... —
Compo pipe	21 15 0	... —
ZINC—Sheet—		
Vieille Montagne ton	33 0 0	... —
Silesian	32 10 0	... —
COPPER—		
Strong Sheet per lb.	0 1 0	... —
Thin „ „	0 1 1	... —
Copper nails „	0 0 11	... —
BRASS—		
Strong Sheet „	0 0 11	... —
Thin „ „	0 1 0	... —
TIN—English Ingots „	0 1 8	... —
SOLDER—Plumbers' „	0 0 8	... —
Tinmen's „	0 0 10	... —
Blowpipe „	0 0 11	... —

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2¾d.	per ft. delivered.
„ fourths	1¾d.	„ „
21 oz. thirds	3¼d.	„ „
„ fourths	2¼d.	„ „
26 oz. thirds	4¼d.	„ „
„ fourths	3¼d.	„ „
32 oz. thirds	5d.	„ „
„ fourths	4¼d.	„ „
Fluted Sheet, 15 oz.	3¼d.	„ „
„ 21 oz.	4¼d.	„ „
¼ Hartley's Rolled Plate	2d.	„ „
⅛ „ „ „	2¼d.	„ „
¼ „ „ „	2¾d.	„ „
Figured and Oxford Rolled Oceanic, etc. white	4d.	„ „
„ „ „ tinted	5¼d.	„ „

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 1 10
„ „ „ in barrels	„	0 1 11
„ „ „ in drums	„	0 2 1
Boiled „ in pipes	„	0 2 0
„ „ „ in barrels	„	0 2 1
„ „ „ in drums	„	0 2 3
Turpentine in barrels	„	0 4 0
„ in drums	„	0 4 2
Genuine Ground English White Lead	per ton	22 10 0
Red Lead, Dry	„	21 10 0
Best Linseed Oil Putty	per cwt.	0 7 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TO CORRESPONDENTS.

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Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

BARLDON.—For road repairs at West-lane, for the Urban District Council. Mr. T. Waddingham, Surveyor, Westgate, Barldon:—

Wilks & Ross, Shipley* £1,042 12

BRIGHTON.—For erecting a public elementary school (Elm-grove mixed school), Wellington-street, for Brighton Education Committee. Messrs. T. Simpson & Son, surveyors, 16 and 17, Ship-street, Brighton:—

—	Main Estimate.	Extra for Tile Dadoes.	Extra for Glazed Brick Dadoes.
	£ s. d.	£ s. d.	£ s. d.
J. Barnes & Son, Brighton ‡	3,186 0 0	220 0 0	240 0 0
R. Cook & Sons ..	3,200 0 0	215 0 0	154 0 0
W. Field & Co. ..	3,630 0 0	203 0 0	180 0 0
F. & G. Foster....	3,234 0 0	234 0 0	169 0 0
W. H. Hyde.....	2,952 0 0	218 0 0	241 0 0
Kenworthy Bros.	4,880 3 11	204 8 10	431 14 0
J. Longley & Co...	3,588 0 0	205 0 0	190 0 0
G. Lynn & Sons ..	3,429 0 0	230 0 0	169 0 0
G. Longden & Son, Ltd.	3,598 14 8	225 0 0	165 0 0
G. R. Lockyer....	3,290 0 0	215 0 0	252 0 0
Norman & Burt ..	3,208 0 0	228 0 0	155 0 0
H. Penfold	3,447 0 0	217 0 0	172 0 0
Rowland Bros. ..	3,739 0 0	209 0 0	119 0 0
Sattin & Evershed	3,542 0 0	217 0 0	135 0 0

‡ Recommended for acceptance (tile dadoes to be used); total £3,406.

CARLISLE.—For erecting attendant's cottages at Castle Carrock and Cumwhinton, for the Corporation. Messrs. James Mansergh & Sons, engineers, 5, Victoria-street, Westminster, S.W.:—

	Castle Carrock Cottage.	Cumwhinton Cottage.
J. Reed.....	£687 12 0	£656 12 7
J. Laing & Son..	581 12 10	560 0 6
W. Latimer, Victoria Viaduct, Carlisle	619 18 6	548 3 8*
J. Heward, Brampton, Cumberland..	535 14 6*	— — —

CARMARTHEN.—For post-office, Carmarthen:—

		Credit.
Rees Davies	£8,550	—
A. J. Colborne	6,970	£72 10
Hayward & Wooster.....	6,237	37 0
D. Davies & Sons	5,765	55 0

DARTFORD.—For external painting work at the Orchard Hospital, for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief:—

W. & H. Davis	£2,744	0 0	
Sparrow & Co.	2,500	0 0	
H. Smith....	2,271	0 0	
R. Woollaston & Co.	1,038	17 0	
L. Kazak....	915	5 0	
Greenhill & Markham..	897	0 0	
W. E. Champion	877	0 0	
Enness Bros.	875	0 0	
Spiers & Pond, Ltd.....	870	19 10	
J. J. Richards	837	0 0	
W. J. Simms & Sons	£696	0 0	
J. Penn Scott	698	0 0	
W. Hussey....	698	0 0	
Self & Co.	695	0 0	
E. Mills	688	0 0	
S. T. Wright & Co.	670	0 0	
J. F. Penn....	579	14 0	
A. Porter, 702, High-road, Tottenham, N.*	556	0 0	
E. Proctor & Son.....	529	0 0	

DARWEN.—For erecting new free library, for the Corporation. Messrs. Haywood & Harrison, architects, Church-street, Accrington:—

R. Shorrock, Union-street, Darwen* £9,200

DUNFERMLINE.—For erecting a block of eight houses at Steelend, Saline, near Dunfermline, for Wilson's & Clyde Coal Co. Mr. J. Henston, architect, Dunfermline. Quantities by architect:—

Brick Work.

P. McDonald ..	£487	0 0	
R. Fisher.....	485	3 8	
T. Beveridge ..	426	14 0	
Scotland & Hutchison ..	407	2 7	
R. R. Gordon ..	399	11 1	
A. Nisbet.....	£394	19 6	
Kennedy & Galt	386	0 0	
J. Millar & Sons	385	0 0	
J. M. Clark	382	10 0	
A. Wilson, Cowdenbeath*	375	0 0	

Joiner Work.

R. Edward ..	£307	13 5	
A. Waddell....	290	0 8	
J. Armstrong...	288	0 0	
C. Robertson..	287	10 0	
R. Stein	279	18 0	
A. Dick	279	0 0	
J. Westwood ..	273	0 0	
E. H. Anderson	272	17 4	
J. Heggie	£272	0 0	
G. Crawford ..	269	0 0	
R. Keir	267	17 10	
Kilgour & Gow	265	14 9	
T. R. & J. Barclay.....	261	18 4	
R. Brough, Dunfermline*	253	0 0	

Plumber Work.

J. Ritchie	£57	15 0	
J. Inglis & Son..	56	12 0	
J. Donald	56	0 0	
T. Gillan	49	15 2	
A. Muir	49	14 8	
Robertson	£48	7 7	
W. Whyte	48	1 0	
R. Kirk	47	18 0	
Rolland & Co., Dunfermline*	45	7 6	

Plaster and Cement Work.

R. McGregor..	£129	19 0	
W. Ure	119	0 0	
D. Kirk	107	5 8	
J. C. Lowe & Son	105	5 2	
J. Walker	100	18 0	
J. A. McLauchlan	£100	14 7	
J. Paul & Son	100	12 0	
J. McGregor ..	96	17 6	
W. Stewart, Crossgates*	81	9 10	

Slater Work.

J. C. Lowe & Son	£89	13 2	
A. Lambert	87	3 6	
C. Brand	86	9 10	
P. Kelly	85	15 0	
J. Walker.....	83	10 0	
Hogg & Marshall	82	12 6	
J. Paul & Sons	£80	12 0	
T. Steele & Son	78	0 0	
W. Stewart	75	9 2	
J. Robertson, Dunfermline*	75	7 0	

ENFIELD.—For alterations to the pumps at the Almaroad Pumping Station, Enfield, for the Metropolitan Water Board:—

Yates & Thom ..	£304	0	
Lilleshall Co.	272	10	
J. Simpson & Co.*	£230	0	

ENFIELD.—For 700 tons of cast-iron pipes, for new River District (Enfield Division), Metropolitan Water Board:—

	Price per ton.
	£ s. d.
D. Y. Stewart & Co., Ltd.	5 15 0
A. G. Cloake	5 5 6
W. J. Oakley	5 5 0
Cochrane & Co. (Dudley)	5 2 6
Sheephridge Coal and Iron Co., Ltd. ..	5 1 6
Yarrow & Co. (Bolton), Ltd.	4 19 0
Cochrane & Co., Ltd. (Cochrane Grove Branch)	4 16 3
Staveley Iron and Coal Co., Ltd.....	4 15 6
Holwell Iron Co., Ltd.	4 14 0
J. Oakes & Co.	4 12 0
Stanton Ironworks Co., Ltd.*	4 9 9

EPSOM.—For waterworks pumping plant, for the Urban District Council. Mr. W. Vaux Graham, engineer, 5, Queen Anne's-gate, Westminster:—

J. Simpson & Co., Ltd., London* £3,095

GREAT CROSBY.—For bricks for the construction of outfall sewers, for the Urban District Council. Mr. Watkin Hall, Surveyor, Council Offices, Coronation-road, Great Crosby:—

Bricks for "inner ring."

P. Wood	£963	7 6	
Bricks for "outer ring" and manholes.			
E. Bridge	692	15 0	

GREAT GRIMSBY.—For erecting gallery, office and bookcases at the Public Free Library:—

B. W. Smith ..	£256	0 0	
C. W. Dixon ..	215	0 0	
G. Wright, Ltd.	210	0 0	
Bolton & Paul Ltd.	187	0 0	
J. A. Thomas ..	£160	19 9	
Emerson Bros., Grimsby*....	154	13 9	

GUILDFORD.—For sewerage works, Stoke, for the Town Council. Mr. C. G. Mason, Borough Engineer, Guildford:—

E. H. Baker & Co.	£9,236	19 2	
W. H. Wheeler.....	8,657	7 4	
G. A. Franks	8,616	10 11	
F. W. Trimm	7,876	0 0	
Edwards & Co.	7,773	11 7	
G. Bell.....	7,282	0 0	
Martin, Wells, & Co.	7,233	0 0	
J. May	£6,829	12 0	
Smith & Co.	6,749	16 0	
G. F. Rayner	6,442	5 7	
I. M. Macdonald	6,245	0 0	
A. Streeter & Co., Godalming*	5,837	15 0	
Cunningham, Forbes, & Co.	5,808	0 0	

HASLEMERE.—For new temporary Church of St. Paul, Fernhurst, near Haslemere, Sussex, to seat 256 persons. Mr. C. L. Morgan, architect, Haslemere, Surrey, and 43, Cannon-street, E.C.:—

Frankie Construction Co., Essex Wharf, Whitechapel, E.* £400

HESWALL (Cheshire).—For constructing Pole Hill-road, for the Wirral District Council. Mr. Thomas Davies, surveyor, Kingsland-road, Birkenhead. Quantities by surveyor:—

J. McGeoch ..	£1,118	0 0	
Hopkinson & Hayes	1,113	0 0	
G. Ward, Cook, & Co.....	1,050	0 0	
R. C. Brebner & Co.....	1,043	15 4	
J. & F. Kitchen	£1,025	0 0	
R. Hughes....	1,010	0 0	
C. L. Warren, 78, St. Paul's-road, Seacombe*	985	0 0	

HILLINGDON EAST.—For cast-iron and stoneware pipe sewers, siphon, etc., for the Uxbridge Rural District Council. Mr. J. Freebairn Stow, Engineer, Corn Exchange, Uxbridge. Quantities by Engineer:—

Cunningham & Co.	£8,818		
W. Norris	7,865		
F. W. Trimm.....	7,583		
Muirhead, Grey, & Matthews	7,340		
Road Maintenance & Stone Supply Co., Ltd.....	7,199		
R. Paterson	7,039		
Peerless, Dennis, & Co.	7,037		
Pethick Bros.	6,950		
H. S. Redhouse ..	6,819		
G. Dickson	6,150		
E. Tabor	6,084		
F. Osenton.....	6,075		
S. Smith.....	6,065		
J. & T. Bluns.....	5,907		
H. E. Buckley	5,860		
G. Bell	5,845		
Langly, Hardy, & Johnson	£5,802		
J. Mowlem & Co. ..	5,788		
R. C. Bubmer & Co.	5,450		
G. G. Rayner.....	5,438		
J. Jackson	5,414		
G. Rutter	5,303		
Wilson, Border, & Co...	5,297		
A. Braithwaithe & Co., Leeds‡.....	4,964		
T. Firr & Sons, Maidenhead‡	4,925		
J. & W. Dean, Ltd., London‡.....	4,903		
Bower Bros., Nottingham‡	4,898		
J. H. Macdonald, Oxford‡	4,496		
Smith & Co., London‡.....	4,155		

‡ Referred to Engineer for report to Council.

LLANAELHAIARN.—For additions and improvements to Trevor Congregational Chapel. Mr. R. Ll. Jones, Council Architect, Carnarvon:—

G. Jones, Morfa Nevin, near Pwllheli .. £1,490

LONDON.—For supplying cast-iron posts and fencing and delivering same to Northern Hospital, Winchmore Hill, N., for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief:—

J. Williamson & Co.‡	—
Wilsons, Pease, & Co., Ltd.	£203 19 6
C. H. Hempstead & Co.	200 0 0
G. Napier & Sons, Ltd.	195 0 0
J. Oakes & Co.	185 0 0
D. King & Sons	169 2 6
Hart, Son, Peard, & Co., Ltd.	165 0 0
Barnard, Bishops, & Barnards, Ltd.	160 17 6
Parsons & Wills	159 5 0
Rowland, Carr, & Co.....	155 0 0
W. Dennis	153 10 0
F. Bird & Co.	153 0 0
W. Hayward & Sons, Ltd.	149 17 6
Hunt Bros. (Oldbury), Ltd.	145 0 0
Wilmer & Sons	144 10 0
Cort, Paul, & Cornick.....	142 6 3
J. Gibb & Co., Ltd.....	142 0 0
W. A. Baker & Co., Ltd.	140 0 0
W. Randall & Sons.....	136 7 9
Clydesdale Iron Foundry Co.	135 15 0
Bayliss, Jones, & Bayliss, Ltd.	134 15 0
W. Miller & Sons.....	130 0 0
General Iron Foundry Co., Ltd.	128 0 0
McDowall, Steven, & Co., Ltd.....	127 17 6
Peirson & Co.	127 10 0
Rowlingsons & Co.	127 0 0
Watford Engineering Works	120 0 0
Jukes, Coulson, Stokes, & Co.	118 0 0
Haward Bros., City Foundry, Featherstone-street, E.C.*	107 0 0

‡ Informal.

LONDON.—For the repairs to and the decoration, heating, and ventilation of the Coroner's Court, High-street, Lambeth, and for the erection of new waiting-room, for Lambeth Borough Council:—

	Repairs, Decoration, Heating, and Ventilation.	New Waiting Room.	The Entire Work.
	£ s. d.	£ s. d.	£ s. d.
Jones Bros.	292 0 0	700 0 0	992 0 0
F. Kinnaird	—	—	666 0 0
G. Neal	80 0 0	550 0 0	630 0 0
W. A. King	120 0 0	455 0 0	575 0 0
A. Coldman & Son	109 10 0	430 0 0	539 10 0
Fenton, Belben, & Co...	124 5 8	414 8 0	538 13 8
W. S. Shepherd & Co...	82 0 0	453 0 0	535 0 0
G. Wade	87 0 0	420 0 0	507 0 0
W. Prior & Co.	380 0 0	122 0 0	502 0 0
R. Harding & Son	90 0 0	410 0 0‡	500 0 0
Aldin Bros. & Davies ..	58 0 0	440 0 0	498 0 0
R. Dean & Co.	134 0 0	354 0 0	488 0 0
W. Taylor & Co.	106 0 0	351 0 0	457 0 0
H. Bragg & Sons	90 0 0	335 0 0	425 0 0
Greenhill & Markham, 11, Great Sutton-street, Clerkenwell, E.C*	129 0 0	227 0 0	356 0 0

‡ Includes the £53 provisional for extras.

LONDON.—For constructing two underground conveniences, Sutton-street, Commercial-road East, St. George's-in-the-East, for the Stepney Borough Council. Mr. M. W. Jameson, A.M.Inst.C.E., Borough Engineer, 15, Great Alie-street, Whitechapel, E.:—

F. & G. Foster..	£3,201	0	
Davis & Bennett	3,200	0	
F. & T. Thorne	3,100	0	
G. Barker.....	3,098	0	
Spencer, Santo, & Co., Ltd. ...	2,999	0	
W. Shurmur & Sons, Ltd.....	2,997	0	
Rowley Bros. ..	£2,949	0	
S. Lissner.....	2,948	0	
B. E. Nightingale	2,842	0	
A. E. Symes....	2,825	10	
F. & E. Davey, Ltd., Southend-on-Sea* ..	2,648	0	

TENDERS—*Continued on page 215.*

List of Contracts, etc.

COMPETITION.

Nature of Work.	By whom Required.	Premiums.	Designs to be delivered
*NEW COUNCIL OFFICES, HIGH HOLBORN	Holborn Borough Council	Not stated	No date.

CONTRACTS.

(For some Contracts still open, but not included in this List, see previous issues.)

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be delivered
Motor Tower Wagon for Overhead System of Tramways	Halifax Tramways Committee	W. M. Rogerson, Boro' Electrical Eng., Foundry-st., Halifax	Feb. 27
Widening Part of Line between Steventon and Didcot	Great Western Railway Co.	Engineer at Station, Paddington Station, London	do.
Paving of Streets	Gateshead Corporation	N. P. Pattinson, Borough Engineer, Town Hall, Gateshead	do.
Excavations for Sinking Trial Hole, etc.	Godalming Town Council	H. Moon, Surveyor, High-street, Godalming	do.
Stores	Derby Corporation	J. Ward, Borough Surveyor, Babington-lane, Derby	do.
Stores, etc.	Durham Lunatic Asylum	Steward, the Asylum	do.
Broken Guernsey Granite	Milton-next-Sittingbourne	D. R. Warlow, Surveyor, Town Hall, Milton	do.
Materials	Ashton-under-Lyne Corp.	Borough Surveyor, Town Hall, Ashton-under-Lyne	Feb. 23
Diverting Cowbridge, etc., Main Road, near Nash Cross	Glamorgan County Council	County Surveyor's Office, Town Hall, Bridgend	do.
Widening, etc., Llandaff, etc., Road at Groesfaen	do.	do.	do.
Lodge at Cemetery	Saltburn-by-the-Sea Burial Bd.	Council Offices, Windsor-street, Saltburn-by-the-Sea	do.
Granite, Slag, Asphalting, Tools	Shardlow R.D.C.	J. S. Wooddisse, District Surveyor, Aston-on-Trent, Derby	do.
Additions to Rothes Police-station	.....	J. Wittet, Architect, Elgin	do.
Painting, etc., at Sheffield Royal Hospital	.....	J. W. Robinson, Secretary, The Board Room, Sheffield	do.
Painting Station Buildings	North-Eastern Railway Co.	C. A. Harrison, Engineer, Forth Banks, Newcastle-on-Tyne	do.
Whinstone	Tynemouth R.D.C.	J. Waters, Dist. Surveyor, Long Benton, Newcastle-on-Tyne	do.
Scavenging	do.	W. Bean, 3, South-view, Forest Hall, Newcastle-on-Tyne	do.
Team Labour	do.	J. Waters, Dist. Surveyor, Long Benton, Newcastle-on-Tyne	do.
Forming and Paving with Scorial Bricks Four Back Streets	Saltburn-by-the-Sea U.D.C.	G. S. L. Bains, Surveyor, Windsor-st., Saltburn-by-the-Sea	Mar. 1
Making Upleatham-street, with Tarred Macadam	do.	do.	do.
Private Street Works	Guildford Town Council	C. G. Mason, Borough Surveyor, Tun's-gate, Guildford	do.
Roadworks, Hawthorn-road, Belle Vue	Shrewsbury Improvemt. Com.	W. Chapple Eddowes, Boro. Surv., The Square, Shrewsbury	do.
Erection, Removal, and Repair of Stalls for Markets	Kingston-upon-Thames Corp.	H. A. Winser, Municipal Offices, Kingston	do.
Reconstructing Combined Drain, Woodside-villas, Ewell-road	Surbiton U.D.C.	W. Neafield, Sanitary Inspector, Council Offices, Surbiton	do.
Sewage Disposal Works, etc., Paisley (Septic Tank, etc.)	Renfrew Upper District Com.	W. R. Copland, C.E., 146, West Regent-st., Glasgow	do.
Sewage Disposal Works, etc., Paisley (Intercepting Sewer)	do.	do.	do.
Stable, Conveniences, etc., Crowcroft Park	Manchester Parks Committee	City Architect, Town Hall, Manchester	do.
Outfall Sewer, Buncrana	Imahomen R.D.C.	T. Johnston, Engineer, East Wall, Derry	do.
Alterations, etc., to Premises, College-square, N., Belfast	Mission to Deaf and Dumb	H. Seaver, Architect, 22, Donegall-place, Belfast	do.
Shop, Warehouses, etc., Kendal	Co-operative Society	J. Stalker, Architect, Kendal	do.
Bridge over Nottingham Canal, Trent-street	Nottingham Corporation	A. Brown, City Engineer, Guildhall, Nottingham	Mar. 2
95 Tons of Steel Work for Bridge	do.	do.	do.
Three Shelters, Vernon Park, Stockport	Stockport Parks Committee	J. Atkinson, Borough Surveyor, Stockport	do.
Supplies	West Ham Corporation	Central Electricity Station, Tucker-street, Canning Town	do.
Making-up Streets	Worsley U.D.C.	J. A. Carson, Engineer, District Offices, Walkden	Mar. 3
Materials	Bolton-upon-Dearne U.D.C.	J. Lodger Hawksworth, Clerk, Stn.-rd., Bolton-upon-Dearne	do.
Materials	Northampton Corporation	A. Fidler, Borough Engineer, Guildhall, Northampton	do.
Materials	Coventry Works Committee	J. E. Swindlehurst, City Engineer, St. Mary's Hall, Coventry	do.
Granite and Slag	Ardsley U.D.C.	T. Harper, Surveyor, Stairfoot, near Barnsley	do.
Highway Materials	Newburn U.D.C.	T. Gregory, Surveyor, Council Offices, Newburn-on-Tyne	do.
Scavenging	do.	do.	do.
Lending of Road Materials	do.	do.	do.
Granite	Billesdon R.D.C.	W. E. Richardson, 18, New-street, Leicester	do.
Materials	Hereford Corporation	City Surveyor, Town Hall, Hereford	do.
Cement, Chippings, and Broken Stone, etc.	Manchester Corporation	J. M. M'Elroy, Corp. Tramways, 55, Piccadilly, Manchester	do.
Stores (Waterworks Department)	Southampton Corporation	W. Matthews, Waterwks. Eng., 19, French-st., Southampton	do.
6,000 tons of Stone	East Riding County Council	County Surveyor, Beverley	do.
Cartage	do.	do.	do.
400 tons of Granite	Chingford U.D.C.	L. C. Bowen, 34, Station-road, Chingford	do.
Use of Steam Roller	do.	do.	do.
Stores	Padiham U.D.C.	J. Gregson, District Engineer, Padiham	do.
Iron Pipes	do.	do.	do.
*WORKS AND MATERIALS	Paddington Borough Council	Borough Surveyor, Town Hall, Paddington, W.	do.
Stores, Work, etc.	Swansea Borough Council	Borough Surveyor, 13, Somerset-place, Swansea	do.
Cast-iron Pipes, Steel Tubes, Water Meters, etc.	do.	Waterworks Engineer, Guildhall, Swansea	do.
Extension of Electricity Station, Burn-road	West Hartlepool Corporation	N. F. Dennis, Boro. Engi., Municipal-bldgs., West Hartlepool	Mar. 5
Extension of Training College, Collegiate-crescent	Sheffield Education Committee	Gibbs & Flockton, Architects, 15, St. James's-row, Sheffield	do.
Supplies and Stores	King's Norton, etc., U.D.C.	Surveyor, 23, Valentine-road, King's Heath	do.
Road Materials	Wangford R.D.C.	F. S. Rix, Clerk, Beccles	do.
Disinfectants	Rotherham R.D.C.	B. Hey, Surveyor, 29B, High-street, Rotherham	do.
Night Soil Removal	do.	do.	do.
Materials	Carlisle Gas Committee	W. J. Smith, Engineer, etc., Gas Works, Carlisle	do.
Materials	Esher and the Diltons U.D.C.	A. J. Henderson, Engineer, Brabant-villa, Thames Ditton	do.
Pumping Station, Scotland-lane, Horsforth	Horsforth U.D.C.	E. J. Silcock, Engineer, 10, Park-row, Leeds	do.
Five Double-Deck Top Covered Cars	Stockport Corporation	J. Atkinson, Borough Surveyor, Stockport	do.
Materials and Stores	Levenshulme U.D.C.	J. Jepson, 8A, Tiviot-dale, Stockport	do.
Flints	Steyning East R.D.C.	E. Cripps, Union Offices, New Shoreham, Sussex	do.
Stores (Gas Works)	Middleton Corporation	E. E. J. Anderson, Gas Engineer, Town Hall, Middleton	do.
Disinfectants (Sanitary Department)	do.	C. H. Norton, Sanitary Inspector, Town Hall, Middleton	do.
780 yds. of Granite Setts Paving	Luddenden Foot U.D.C.	J. S. Bottomley, Surveyor, Council-chmbrs., Luddenden Foot	do.
Granite and Limestone Macadam, etc.	do.	do.	do.
100 yds. of 15-in. Cast-iron Pipes, etc.	Seaford U.D.C.	Pollard & Tingle, Engs., 31, Old Queen-st., W'minster, S.W.	do.
Stores	Heston and Isleworth U.D.C.	P. G. Parkman, Surveyor, Council House, Hounslow, W.	do.
Steel Roof, etc., Neepsend Station	Sheffield Gas Company	J. W. Morrison, Engineer, Commercial-street, Sheffield	Mar. 6
Four One-story Pavilions, etc., at "The Abbey" Sanatorium	Belfast Guardians	S. C. Hunter, Bldg. Surv., Scottish Provident-Bldgs. Belfast	do.
A Two-story Hospital for a Mortuary, etc.	do.	do.	do.
Private Street Works	Cheshunt U.D.C.	R. H. Jeffes, Engineer, Manor House, Cheshunt	do.
Annual Contracts	Finchley U.D.C.	E. H. Lister, Council Offices, Finchley, N.	do.
Stores	Gt. Central Railway Co.	A. W. Longden, Storekeeper, Cornwall-street, Openshaw	do.
Stores	Margate Corporation	Surveyor's Office, Town Hall, Margate	do.
Small Granite and Pitch and Tar	Woodford U.D.C.	W. Farrington, Surveyor, Council Offices, Woodford Green	do.
*WORKS AND MATERIALS	Willesden D.C.	Council's Engineer, Dyne-road, Kilburn, N.W.	Mar. 7
Materials	Cheadle and Gatley U.D.C.	E. Sykes, Surveyor, 9, High street, Cheadle	do.
Granite, etc.	Wetherby R.D.C.	Mr. Wiseman, Surveyor, Wetherby	do.
Annual Contracts	Twickenham U.D.C.	F. W. Pearce, Surveyor, Town Hall, Twickenham	do.
Buildings at the Town Hall, Stamford	Town Council	F. E. Ryman, Borough Engineer, Stamford	do.
Scavenging	Steyning West R.D.C.	E. Cripps, Union Offices, New Shoreham, Sussex	do.
Making-up Page-road, Anchor-road, etc.	Clacton U.D.C.	A. R. Robinson, Surveyor, Town Hall-buildings, Clacton	do.
Two and three-quarter Miles of 10-in. Cast-iron Main Pipes, etc.	Poole Waterworks Co.	H. F. J. Barnes, Engineer, Poole	do.
Works and Supplies	Edinburgh Corporation	Superintendent of Works, Royal Exchange, Edinburgh	do.
Repairs on Pavements, Granolithic Work, etc.	do.	City Road Surveyor, City Chambers, Edinburgh	do.
Tools, General Engineer's Stores, etc.	do.	Resident Electrical Engineer, Dewar-place, Edinburgh	do.
Drain Rods, Oils, Paints, etc.	do.	Inspector of Cleaning, etc., 331, High-street, Edinburgh	do.
Cement, Lime, Drain Pipes, etc., etc.	do.	Burgh Engineer, Police Chambers, Edinburgh	do.
Fire Appliances, etc.	do.	Fire Master, Lauriston-place, Edinburgh	do.

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be delivered
Stoneware Pipe Sewers, Ynyshir, etc.	Rhondda U.D.C.	W. J. Jones, Engineer, Council Offices, Pentre, Rhondda	Mar. 8
Stoneware Pipes, Junctions, etc.	Leyton U.D.C.	W. Dawson, Surveyor, Town Hall, Leyton, E.	do.
Repair and Decoration of Houses, Banbury	Banbury Municipal Charities	Fortescue & Sons, 45, High-street, Banbury	do.
School and Chapel, Little Eaton	United Methodist Free Church	A. E. Eyre, Architect, Almond Villas, Almond-street, Derby	do.
Surface Water Drainage	Guildford Town Council	C. G. Mason, Borough Engineer, Guildford	do.
Renovating and Improving Fronts of Town Hall	Dorchester Town Council	G. J. Hunt, Boro. Engineer, Guildhall-chambers, Dorchester	do.
Alterations, etc., to Corn Exchange	do.	do.	do.
*LIGHTHOUSE, DWELLING, ETC., PEMBROKESHIRE	Trinity House Corporation	Trinity House, E.C.	do.
Residence, Sedbergh, Kendal	Mr. B. Wilson	J. F. Curwen, Architect, 26, Highgate, Kendal	Mar. 9
Carting Work	Willington U.D.C.	J. H. Gardner, Surveyor, Willington	Mar. 10
Repairs, etc., of Street Lamps	do.	do.	do.
Paving, Channelling, Kerbing, etc.	do.	do.	do.
Road Stones	do.	do.	do.
Scavenging	do.	do.	do.
600 Tons of Lime	Colchester Road, etc., Com.	H. Goodyear, Borough Engineer, Town Hall, Colchester	do.
Goods and Materials	do.	do.	do.
Materials	Haslingden Town Council	J. S. Green, Borough Surveyor, Haslingden	do.
Materials for Highways, Sewers, etc.	Middleton Corporation	W. Welburn, Borough Engineer, Town Hall, Middleton	do.
Bridge and Road at Aberaman	Aberdare U.D.C.	Surveyor, Town Hall, Aberdare	do.
Stores	Eastbourne Town Council	A. E. Prescott, Borough Surveyor, Town Hall, Eastbourne	do.
Detached Villa at Greenisland		T. Houston, Architect, Kingscourt, Wellington-place, Belfast	Mar. 12
Bacteria Beds and Delivery, etc., Channels	Halifax Highways Committee	J. Lord, Borough Engineer, Town Hall, Halifax	do.
Penstocks, Valves, and Castings	do.	do.	do.
Reservoir, Sturton Grange, Alnwick	Alnwick R.D.C.	H. W. Walton, Clerk, Alnwick	do.
School, Gobowen, Whittington	Salop Education Department	Shayler & Ridge, Architects, Oswestry	do.
Annual Contracts	Barnes U.D.C.	Engineer and Survey., Council Hse., High-st., Mortlake, S.W.	do.
Quarrying, Breaking, Sifting and Yarding Gravel	Wimborne&Cranborne R.D.C.	R. T. S. Seymour, District Surveyor, Wimborne Minster	do.
Materials for Electricity Supply Department	Edinburgh Corporation	Engineer's Office, 5, Dewar-place, Edinburgh	do.
Stores and Work	Belfast Corporation	Superintendent of Works' Office, Town Hall-street, Belfast	Mar. 13
Works and Materials	Holborn Borough Council	L. Walford, 197, High Holborn, W.C.	do.
Asphalting Carriageways, Great Queen-street, etc.	do.	do.	do.
*CONSTRUC. OF ROADS, ETC., PITSHANGER EST., EALING	The Trustees	Hall-Jones & Cummings, 41, Broadway, Ealing, W.	do.
*NEW POST OFFICE AT WARRINGTON	H.M. Works	H.M. Office of Works, Storey's-gate, Westminster, S.W.	Mar. 14
Road Materials	Eastbourne R.D.C.	T. E. V. Kirtlan, Clerk, 92, Terminus-road, Eastbourne	Mar. 15
Public Elementary School, Feniscowles, near Blackburn	Lancashire Education Com.	H. Littler, County Architect, 16, Ribblesdale-place, Preston	do.
Stores	Stockport Electricity Com'tee.	A. J. H. Carter, Electricity Supply Works, Millgate, Stockport	do.
Materials	Walsall R.D.C.	W. P. Young, District Surv., Council Offices, Rushall, Walsall	do.
Stores and Works	Reading Corporation	J. Bowen, Borough Engineer, Town Hall, Reading	do.
*TWO BLOCKS AT ST. JOHN'S-ROAD WORKHOUSE, N.	Islington Guardians	W. Smith, Architect, 65, Chancery-lane, W.C.	do.
Materials	Wimbledon Corporation	Borough Engineer, Town Hall, Wimbledon	Mar. 17
*ADDITIONS AND ALTERATIONS TO SCHOOL, ST. ALBANS	Herts County Council	County Surveyor, Hatfield	Mar. 21
*NEW SCHOOL AND COOKERY CENTRE, BUSHEY	do.	do.	do.
Extensions, etc., of Mermaid Inn, Port Tennant, Swansea	Mr. E. Evans Bevan	J. Cook Rees, Architect, Neath	No date.
Rebuilding Industrial School, Convent of St. Louis, Monaghan	.....	A. Ferguson, Bldg. Surv., Scottish Provident-bldgs., Belfast	do.
Additions to Moravian Sunday-school, Baildon	.....	W. Ellis, Architect, Meanston	do.
Wesleyan Sunday-schools, Todmorden	.....	W. J. Morley & Son, 289, Swan-arcade, Bradford	do.
Farm House, etc., Etwall	.....	E. R. Ridgway, Architect, Long Eaton	do.
Painting, etc., Burmantofts Congregational Church, etc.	.....	J. Fryer, 29, New Briggate, Leeds	do.
Working Men's Club, etc., Thorpe, near Wakefield	.....	T. A. Buttery & S. B. Birds, Architects, Morley	do.
Parish Church-room, Penarth	.....	J. Coates Carter, Bank-buildings, Cardiff	do.
Semi-detached Villas, Buxton	.....	Garlick & Flint, Architects, Terrace-road, Buxton	do.
3,500 tons of Road Stone	Mrs. B. Brocklehurst	B. & E. M. Challenor, 59, Stert-street, Abingdon	do.
*ELECTRIC LIGHTING OF NEW BUILDINGS	Abingdon R.D.C.	W. D. Carde, Architect, 81, Whitehall-place, S.W.	do.
*SUPERSTRUCTURE OF NEW COLLEGE BLDGS., CARDIFF	South Wales, etc., Univ. Coll.	The Registrar, University College, Cardiff	do.
*REBUILDING SHOP PREMISES, WESTMINSTER	Univ. Coll. of South Wales, etc.	C. Granville Baker, Architect, 5, Bloomsbury-square, W.C.	do.
	.....		

PUBLIC APPOINTMENT.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in
*TIMEKEEPER AND MATERIAL CLERK	London County Council	Not stated	No date.

AUCTION SALES.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*ROAD MATERIALS, PLANT, ETC.—Stone Yard, Stoney-street, Borough Market, S.E.	H. Langston & Co.	Feb. 28
*SURPLUS BUILDER'S PLANT, OLD KENT-ROAD, S.E.—469, Old Kent-road, S.E.	H. J. Bromley	Mar. 5
*LEASEHOLD PROPERTY, MOORGATE-STREET, E.C., ETC.—At the Mart, E.C.	Debenham, Tewson, & Co.	Mar. 27
*FREEHOLD SITE, NEAR STRAND, W.C.—At the Mart, E.C.	do.	do.
*FREEHOLD PROPERTY, FINSBURY, E.C.—At the Mart, E.C.	do.	do.
*BUILDING SITE, HAYMARKET, S.W.	May & Rowden	Mar. 29
*FREEHOLD BUILDING LAND, ETC.—At Ilford, Barkingside	A. Savill & Sons	March 30
*FREEHOLD BUILDING LAND, SHEERNESS—At the Mart, E.C.	Tuckett & Son	Apr. 2
*THE HOLBORN TOWN HALL, GRAY'S INN-ROAD, W.C.—At the Mart, E.C.	Jones, Lang, & Co.	Apr. 9

* *Those with an asterisk are advertised in this number*: *Competitions*, iv.; *Contracts*, iv. vi. viii. x.; *Public Appointments*, xv.ii.; *Auction Sales*, xxvi.

TENDERS.—*Continued from page* 213.

LONDON.—For the erection of factory premises at Montford-place, Kennington, S.E., for Hayward Bros., Ltd. Mr. A. W. Tribe, architect, 120, Clapham-road, London:—

J. Hoare & Son	£15,679	Rice & Son	£14,680
T. Hooper & Son	15,580	W. Hammond	14,575
G. Brittain	15,570	J. Parsons	14,493
Hibberd Bros.	15,500	Turtle & Appleton	14,470
W. Vanstone	15,123	L. Whitehead & Co.	14,450
Higgs & Hill	14,984	Holloway Bros.	14,400
F. & F. H. Higgs	14,831	W. Smith & Son, Eldon Works, Vauxhall*	13,985
Holliday & Greenwood	14,749		

LONDON.—For oak rails, gravel boards, and pales for fencing, for Northern Hospital, Winchmore Hill, N., for Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief:—

E. C. White	£240 0 0	C. Light & Co., Ltd.	£182 2 6
J. Longley & Sons	214 2 4	Brown & Creese	180 0 0
A. Turner & Sons	211 0 0	W. Stenning & Son	178 0 0
R. Batcheller	205 16 8	Rowland Bros.	171 0 0
M. Marshall	198 0 0	J. & S. Agate, Ltd., Horsham*	170 10 0
McKee & McNally	197 0 0		
Rose, Smith, & Co.	194 13 9		

LONDON.—For the supply of 800 to 850 tons of 30-in. cast-iron pipes, for use in connexion with the construction of a 30-in. main from Lee Green to Deptford, for the Metropolitan Water Board:—

	Price per ton.
D. Y. Stewart & Co., Ltd.	£5 10 0
Macfarlane, Strang, & Co., Ltd.	5 7 6
Cochrane & Co.	5 0 0
Staveley Coal and Iron Co. Ltd.	4 14 0
J. Oakes & Co.	4 12 0
Shepebridge Coal and Iron Co., Ltd.	4 12 0
Stanton Iron Works Co., Ltd.	4 11 6
Holwell Iron Co., Ltd.	4 10 0
Cochrane & Co., Ltd. (Cochrane Grove Branch), Middlesbrough-on-Tees*	4 6 3

LLANSAMLET.—For erecting Calvinistic Methodist chapel and vestry at Birch-grove, for the Trustees of the Welsh Calvinistic Methodists, Birch-grove, Swansea. Mr. Rees Llewellyn, architect, Birch-grove House, Birch-grove :—

Lloyd Bros.	£4,850	W. Morgan	£3,650
Thomas & Jones	3,750	D. W. Rosser	3,630
Waring, Cole, & Waring	3,673	Price Bros., Cardiff*	2,995

LONDON EDUCATION COMMITTEE TENDERS.

Rotherhithe, Magdalen-street (New School).

[A permanent one-story school for 324 children (junior mixed and infants) to take the place of the existing school on the Magdalen-street site, Rotherhithe.]

J. Marsland & Sons	£5,636 0 0
W. Downs	5,540 0 0
W. Harris	5,431 10 0
G. Munday & Sons	5,398 0 0
Martin, Wells, & Co., Ltd.	5,295 0 0
Patman & Fotheringham, Ltd.	5,291 0 0
Rice & Son	5,278 0 0
Treasure & Son	5,245 13 8
E. Triggs	5,227 0 0
W. Johnson & Co., Ltd.	5,198 0 0
J. & M. Patrick	5,161 0 0
T. D. Long	5,127 0 0
Kirk & Randall	5,086 0 0
C. Wall, Ltd.	5,060 16 1
J. Garrett & Son	5,007 0 0
J. Appleby & Sons	4,990 0 0
H. L. Holloway	4,982 0 0
T. G. Sharpington;	4,979 0 0
F. & H. F. Higgs	4,960 0 0
W. Lawrence & Son	4,948 0 0
E. Lawrance & Sons	4,931 0 0
Galbraith Bros., 46, Camberwell-green*	4,690 0 0

[The architect's (Education) estimate, comparable with these tenders, is £5,621.]

Lewisham, Torridon-road (Heating Apparatus).

J. Gray	£899
J. Grundy	897
H. C. Price, Lea, & Co.	835
Clark, Bunnett, & Co., Ltd.	825
Wenham & Waters, Ltd.	785
W. Richardson & Co.	775
J. Yetton & Co.	765
J. & F. May	765
Brightside Foundry & Engineering Co., Ltd., 28, Victoria-street, Westminster*	745

[The architect's (Education) estimate, comparable with these tenders is £697.]

Kensington, N., Portobello-road (Rearranging Heating Apparatus).

F. W. Brock	£205 15	G. & E. Bradley	£123 0
C. Kite & Co.	175 0	Wippell Bros. & Row	120 0
J. Defries & Sons, Ltd.	135 10	G. Davis, 28, Silver-street, Kensington*	110 0
Stevens & Sons	130 0		
Palowkar & Sons,	129 0		

[The architect's (Education) estimate, comparable with these tenders, is £135.]

ROMFORD.—For three new classrooms and cloakrooms, Hornchurch Park-lane schools, for Essex Education Committee (Romford L.A.S. district). Quantities by Mr. S. I. Adams, architect, Weston-chambers, Southend-on-sea :—

J. T. Luton	£2,895 0 0
E. Pavitt & Sons	2,860 0 0
E. F. Scowen	2,827 0 0
W. H. C. Heath	2,750 0 0
J. F. Robey	2,748 0 0
Harvey & Co.	2,591 17 0
J. W. Jerran	2,562 0 0
L. F. Lamplough	2,481 0 0
H. Butcher	2,478 9 9
A. Partridge Bros.	2,474 0 0
I. F. Holliday	2,457 0 0
W. H. Hyde	2,437 0 0
Eaby & Chivers	2,389 19 11
J. Barker & Co.	2,387 0 0
W. E. Westgate	2,375 0 0
F. & E. Foster	2,349 0 0
I. S. Hammond & Sons	2,265 0 0
Dowsing & Davis	2,250 0 0
R. Elvy	2,249 0 0
I. C. Fleaman	2,249 0 0
F. & A. Willmott	2,229 0 0
Myall & Upsom	2,210 0 0
F. & E. Davey	2,187 0 0
W. I. Maddison	2,153 0 0
T. Bruty, Hornchurch‡	2,100 0 0

[Architect's estimate, £2,258.]
‡ Recommended for acceptance.

MANSFIELD.—For erecting a cottage, Chesterfield-road, for the Water Department. Mr. R. F. Vallance, architect, Mansfield :—

G. Frisby, Mansfield*	£230

SHORTLANDS (Kent).—For erecting three shops. Mr. Arthur Cole, architect, "Mogok," Thurlestone-road, West Norwood :—

J. Peattie	£2,077 0	J. Wilford	£1,360 0
W. Irwin	1,597 0	J. Hollingsworth	1,350 0
J. Pratt & Sons	1,570 0	J. Abbot	1,300 0
E. Antill & Sons	1,527 0	S. R. Spinner	1,245 0
A. J. & C. Hocking	1,474 0	Mattock & Parsons, Gray's Inn-road, W.C.*	1,225 0
Jones & Andrews	1,460 0	T. C. Gorham	1,150 12
W. Ellis & Co.	1,400 0		
C. E. Kenworthy	1,390 0		

SURBITON.—For certain repairs and alterations to the house known as Westfield Lodge, Portsmouth-road, Surbiton, for the Metropolitan Water Board :—

E. Benfield	£557	Newson & Hawkins	£434
C. Oldridge & Sons	505	W. H. Gaze & Sons*	319

SUTTON.—For drainage work at residences, Belmont Asylum, for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief. Messrs. T. Dinwiddy & Sons, architects, 54, Parliament-street, S.W. :—

H. Smith	£591 0 0	W. Reason	£289 0 0
F. Bull	329 0 0	Hampton & Sons, Ltd.	245 10 0
Staines & Son	315 0 0	G. Jennings, Ltd.	245 2 0
Davey & Roberts	305 0 0	H. W. Haydon	229 0 0
Martin, Wells, & Co., Ltd.	300 0 0	J. B. Potter, Carshalton-road, Sutton*	168 0 0
Cropley Bros., Ltd.	296 0 0		
T. Holloway	276 0 0		

WEST HALTON.—For additions to elementary school, West Halton, near Frodingham, for Lindsey County Council Education Committee. Messrs. Scorer & Gamble, architects, Bank-street-chambers, Lincoln :—

Sprakes & Sons	£440 0 0	C. Bray	£366 0 0
W. Pallister	418 10 0	R. Mills	357 6 3
Hall & Harrison	404 10 0	A. J. Elmes	356 18 9
H. J. Thompson	399 8 5	F. Scarborough, Lincoln*	344 0 0
H. Grassby	388 13 0		

WOOLTON.—For the construction of 760 lineal yds. of road, etc., Hillside Park, for Mr. J. P. Reynolds. Mr. Peter Davies, architect and surveyor, 8, Cook-street, Liverpool. Quantities by architect :—

Hopkinson & Heyes	£4,113 0 0	Cook & Co.	£3,183 0 0
Exors. of W. F. Chadwick	3,603 0 0	G. Dale	3,032 0 0
Stansbury & Co.	3,582 0 0	Allan & Downham	2,851 10 3
P. Tyson	3,433 0 0	Mitchell & Son	2,679 0 0
Standing & Co.	3,350 0 0	R. & J. Evans	2,600 0 0
Lawrence, Marr, & Son	3,179 0 0	Bower Bros., Church-st., Halifax*	2,585 0 0

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